MARCH 28, 1942

Railway Age

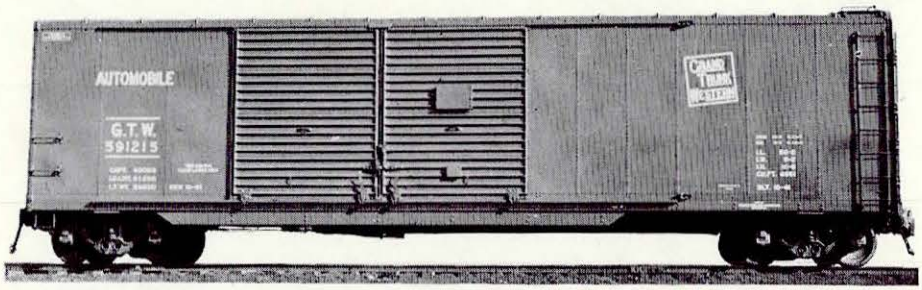
Founded in 1856

YOUNGSTOWN STEEL DOORS

Camel Roller Lift Fixtures

Camel End Door Fixtures

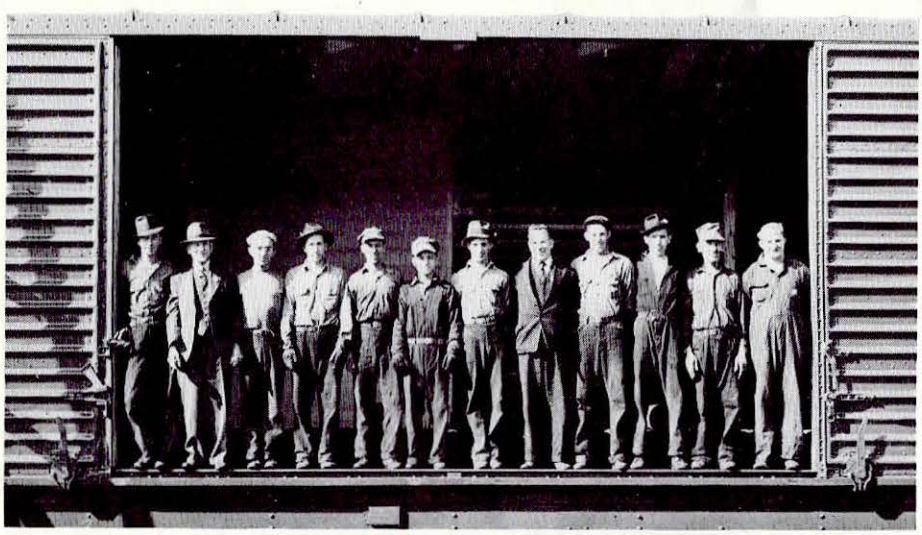
McCARTNEY LIBRARY
GENEVA COLLEGE



50′ 6″ AUTOMOBILE CARS

GRAND TRUNK WESTERN

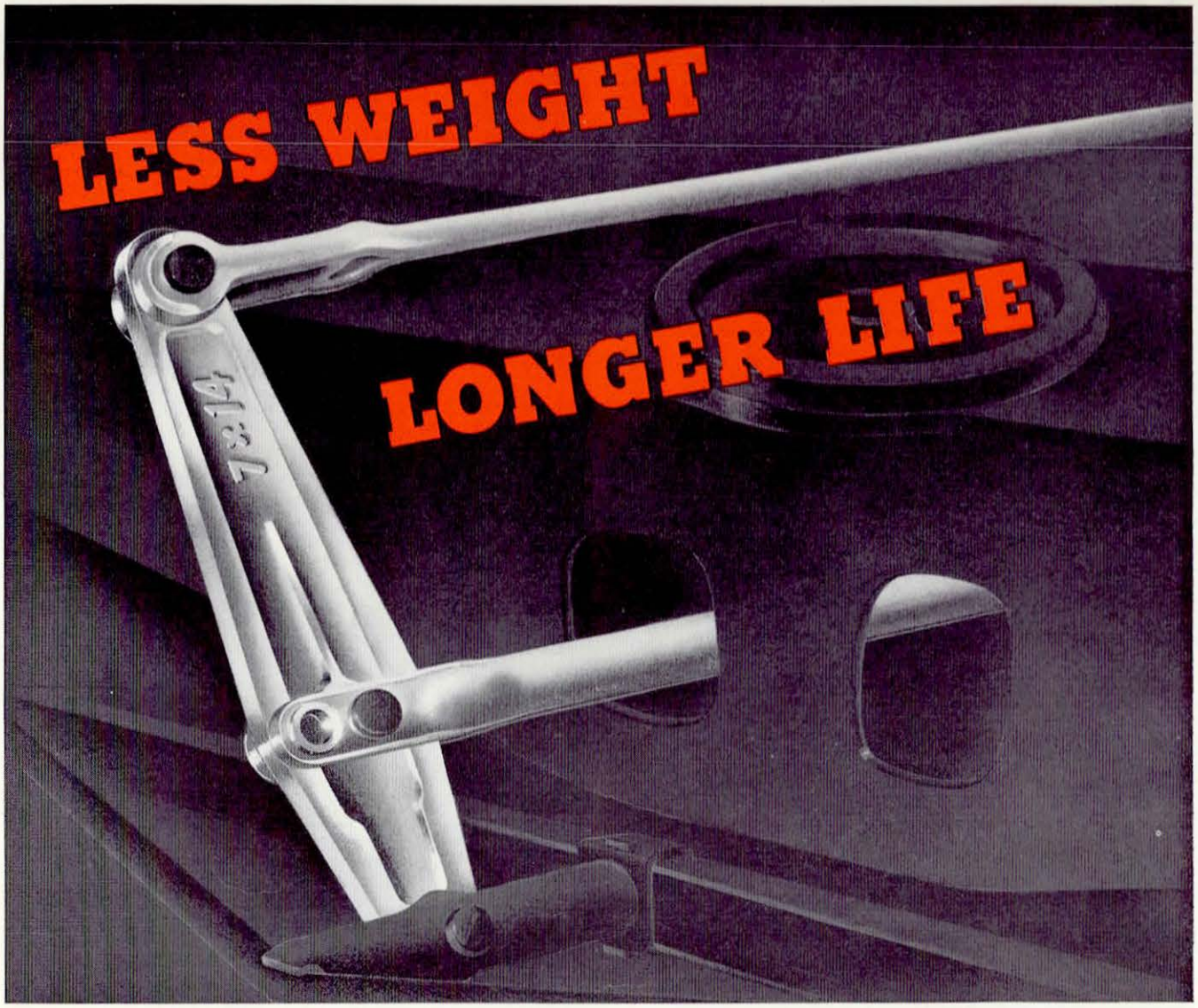
200 CARS BUILT IN 1941 — 200 CARS ORDERED 1942



16′ 6″ CLEAR SIDE DOOR OPENING

YOUNGSTOWN STEEL DOOR COMPANY

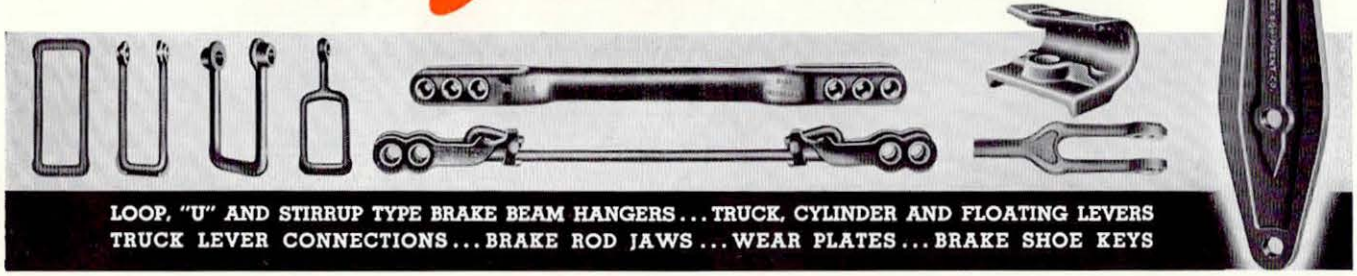
Cleveland Chicago New York Youngstown



Schaefer Forged Steel Foundation Brake Gear Parts cut down the expense and delays on "bad order" cars

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS... TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS... BRAKE ROD JAWS... WEAR PLATES... BRAKE SHOE KEYS

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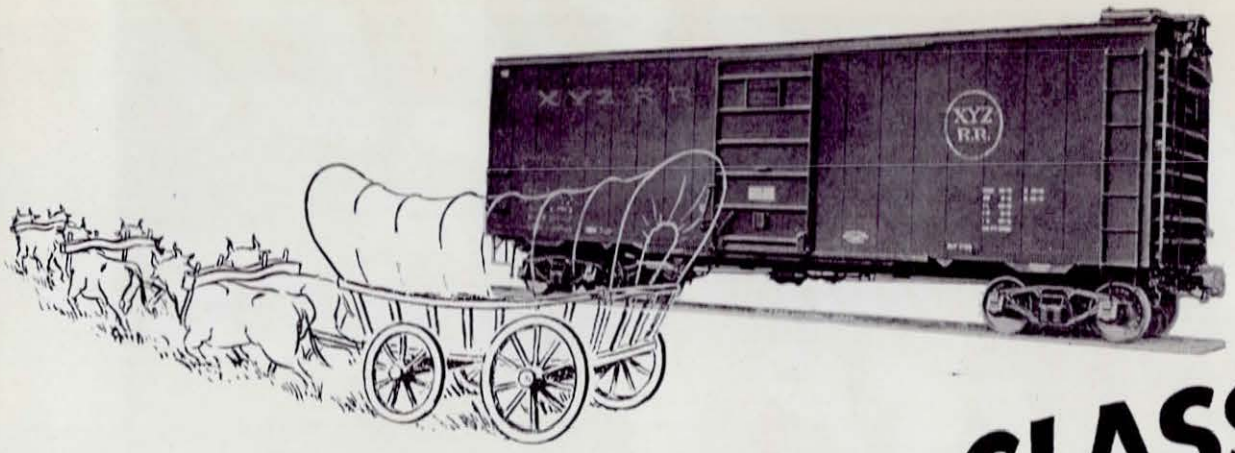
BETHLEHEM STEEL PRODUCTS HELP TO

Keep 'em Rolling

Keeping the materials and machines needed for all-out war production rolling over more than a quarter million miles of main-line track is a man-size job. America's railroads are doing that job without a hitch, accepting each new burden as it comes along, revising schedules, stepping up operations all along the line.

Helping America's railroads to maintain and to increase the pace of transportation is a big job for America's steel producers too—but only one of many jobs steel is called upon to do. Bethlehem Track Equipment, Bethlehem Wrought-Steel Wheels and Forged Axles—these and other steel products are doing their best today to "keep 'em rolling" on a dozen major lines as well as in new classification yards and spurs.

BETHLEHEM STEEL COMPANY



TAKE YOUR CARS OUT OF THE COVERED WAGON CLASS

ALTHOUGH it is the strongest container for freight transportation, the conventional box car is nothing but a *covered wagon* built on modern foundations and equipped with the safest trucks and brake equipment.

While the body is a well constructed shell there are no facilities inside for protection to lading—no means for expediting loading and unloading and no provisions for utilizing maximum capacity.

The UTILITY LOADER is designed to take care of all of these long needed requirements. It provides the greatest possible safety, simplicity and economy in the loading and transportation of nearly all types of merchandise in freight cars.

The UTILITY LOADER is modern equipment. It will handle any shape or size package and will pay its way in savings. By quick, easy adjustment it permits tight loading (without slack) in a minimum of time. This eliminates loading dunnage (lumber, nails, etc.), reduces loading time and brings damage claims down close to nothing.

EVANS PRODUCTS COMPANY
DETROIT

Evans EVANS *Products*

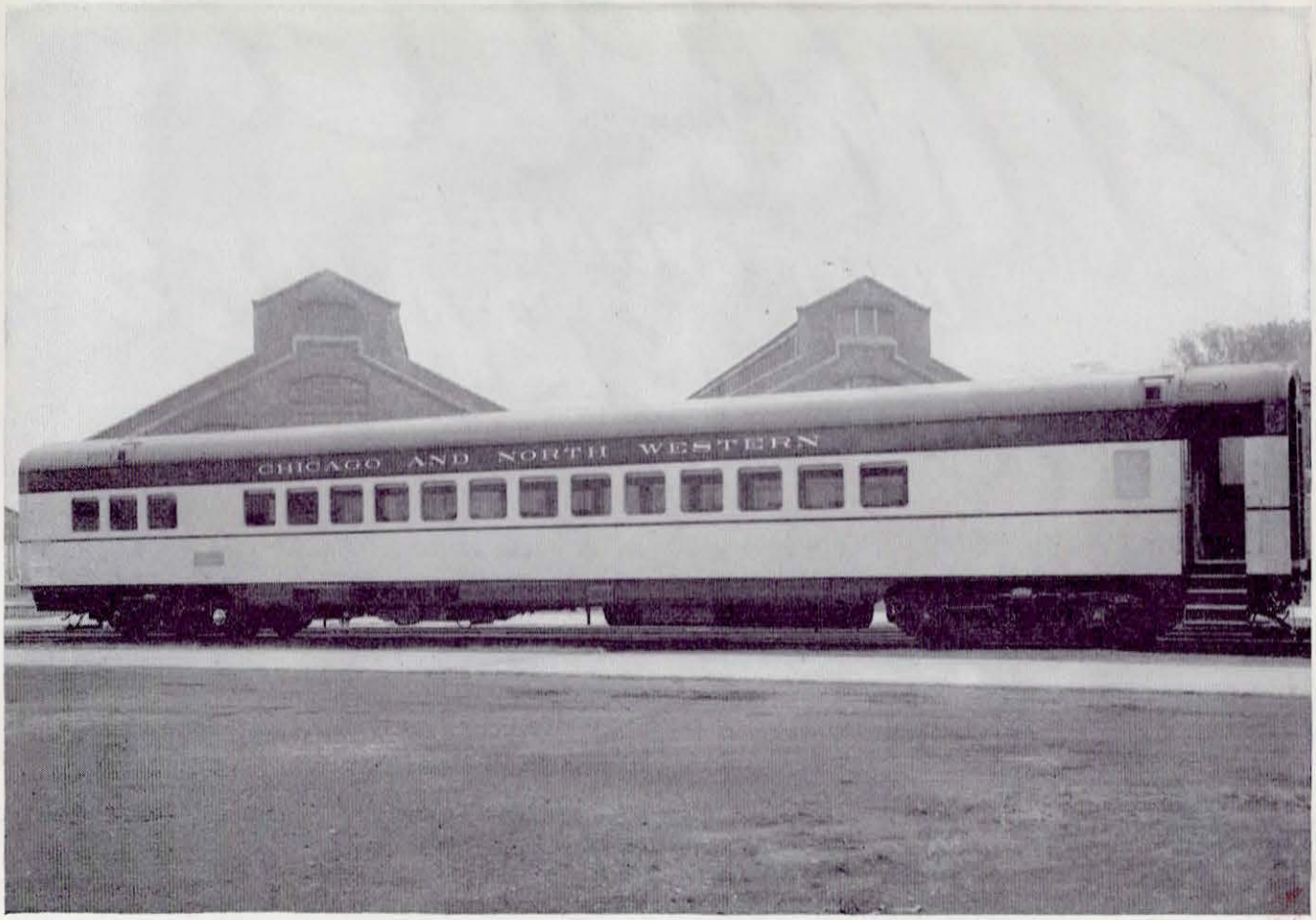
UTILITY LOADER
UNIVERSAL LOADING EQUIPMENT

SIMPLEX
UNIT CYLINDER
CLASP BRAKES

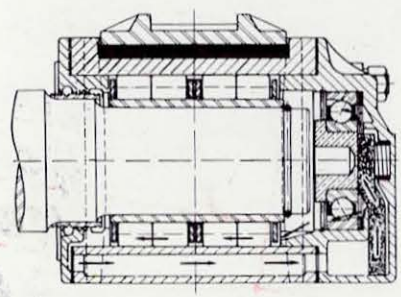
... unanimous choice for the streamliners

RECENT TRAINS	SIMPLEX *Unit Cylinder* CLASP BRAKES
ATLANTIC COAST LINE "CHAMPIONS"	*Yes*
BURLINGTON'S "SILVER STREAKS AND ZEPHYRS"	*Yes*
CHICAGO & NORTH WESTERN'S "400"	*Yes*
C. & N. W.—UN. PAC.—SN. PAC. TRAINS	*Yes*
FLORIDA EAST COAST "CHAMPION"	*Yes*
GULF, MOBILE & OHIO TRAINS	*Yes*
KANSAS CITY SOUTHERN'S "SOUTHERN BELLES	*Yes*
MISSOURI PACIFIC'S "EAGLES"	*Yes*
PENNSYLVANIA RAILROAD TRAINS	*Yes*
PULLMAN OPERATED STREAMLINED CARS	*Yes*
ROCK ISLAND'S "ROCKETS"	*Yes*
SANTA FE'S "TULSAN"	*Yes*
SOUTHERN PACIFIC'S "DAYLIGHTS"	*Yes*
SEABOARD AIR LINE'S "SILVER METEORS"	*Yes*
	Yes
	Yes

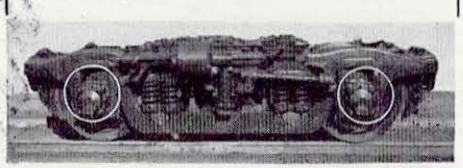
MERICAN STEEL FOUNDRIES



FAFNIRS SCORE AGAIN!



The only journal bearing carrying radial loads on Roller and thrust loads on Ball Bearings.



All 25 of Chicago & Northwestern's new cars roll smoothly on Fafnir Journal Bearings!

The new fleet of cars placed in service recently by C & NW is completely equipped with high capacity Fafnir Ball and Roller Journal Boxes. These new cars were built by Pullman-Standard and patterned after C & NW's famous "400" cars. They will see service on fast schedules between Chicago and points in Wisconsin and Northern Michigan.

The dependable performance of Fafnir Ball and Roller Journal Bearings on the original "400" cars, as well as other C & NW cars has been proven by many million miles of service. Their unbeatable combination of high capacity rolls, and balls to take end thrust — positive lubrication at all speeds — hardened cast steel housing, reversible for double wear — rubber insulation to deaden noise and vibration — are ample reasons why they were again selected for duty on these latest C & NW cars. The Fafnir Bearing Company, New Britain, Connecticut.

FAFNIR

BALL AND ROLLER JOURNAL BEARINGS

The Only Combination Ball and Roller Journal Box

Switching costs go down —

....with Baldwin Diesel-electrics in the yards

Every day, in yards from coast to coast, switching costs are being reduced and cars are being handled more safely and with greater speed. And on the main lines, too, America's railroads are moving more tonnage than ever before.

Contributing in no small measure are Baldwin Diesel-electrics. They are handling more cars than in years past, and doing their job at low cost—much lower than would be possible with older steam power.

More than 50 years of oil-engine experience is built into every Baldwin De La Vergne engine. Of equal importance is the long association of Westinghouse Electric & Manufacturing Company and Baldwin in building electric and Diesel-electric locomotives.

When you have a Baldwin Diesel-electric in your yards, either 1,000-hp or 660-hp, you have a locomotive built by a 111-year-old firm which has grown with the railroads.

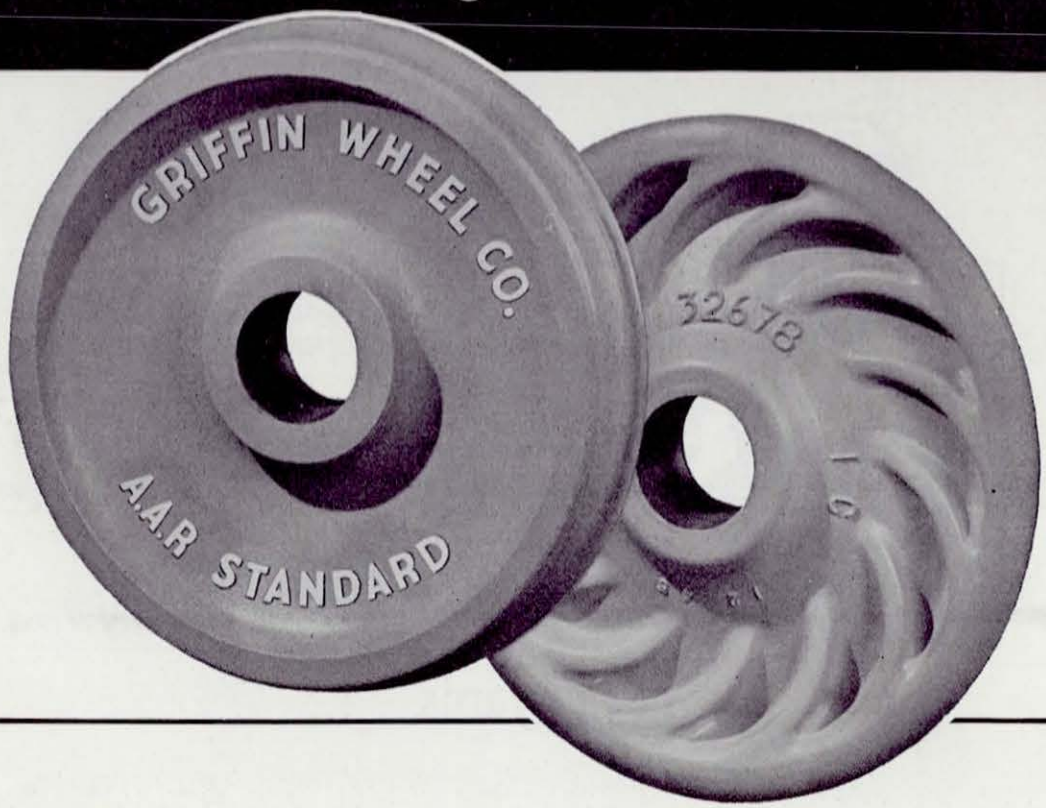
Switching cost can be reduced, and the *sure* way is with Baldwin Diesel-electrics.

THE BALDWIN LOCOMOTIVE WORKS

BLW THE BALDWIN GROUP

Philadelphia

GUARANTEE Again INCREASED!



GRIFFIN WHEELS whether applied by car owner or foreign line are GUARANTEED for TEN YEARS under freight cars of 30, 40 and 50 tons capacity.

— — —

A LOW COST of not more than SIX CENTS A MONTH per wheel is ASSURED.

— — —

This guarantee is given notwithstanding HIGHER SPEED and GREATER MILEAGE.

— — —

"KEEP THE WHEELS ROLLING"

GRIFFIN WHEEL COMPANY

410 NORTH MICHIGAN AVE., CHICAGO, ILL.

PLANTS Chicago, Detroit · Boston, Cleveland · Cincinnati, St. Paul · Kansas City, Council Bluffs · Denver, Salt Lake City · Los Angeles, Tacoma

AS LONG AS THERE'S A SKY

High above the world's largest factory, devoting its output exclusively to the production of Power Brakes and various Air Controls for commercial motor vehicles, is a sign ★ Although it carries no spectacular message, it is more significant than many which do ★ Certainly nothing could give more subtle assurance of consistent dependability than its combination of the two greatest names in braking ★ Thus it is that, as long as there's a sky to catch the reflection of this message, you may depend implicitly upon genuine Bendix-Westinghouse Air Brakes and Air Control Devices to see you through ★ And when we say, "see you through," we mean just that . . . for we of Bendix-Westinghouse are pledged for the duration to work, sweat, and even fight to see that essential transportation continues to roll safely and economically.

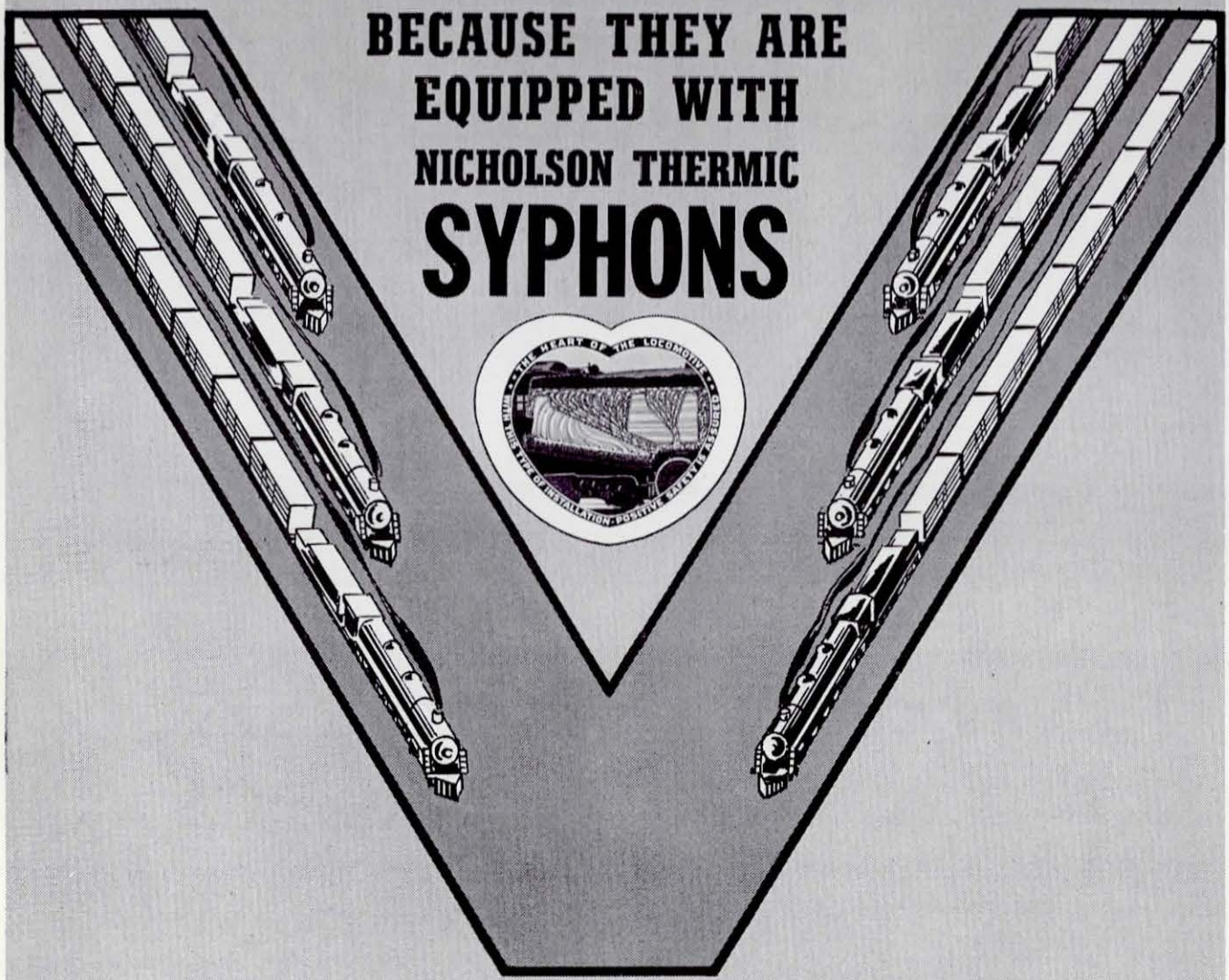
BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE CO.
ELYRIA, OHIO

AN ORGANIZATION WHOSE UNDIVIDED EFFORT AND COMPLETE RESOURCES ARE DEVOTED TO YOUR CONVENIENCE AND SAFETY

THESE 6 BIG LOCOMOTIVES IN THE UNITED STATES AND CANADA

Are Still Pulling for Victory

BECAUSE THEY ARE EQUIPPED WITH NICHOLSON THERMIC SYPHONS

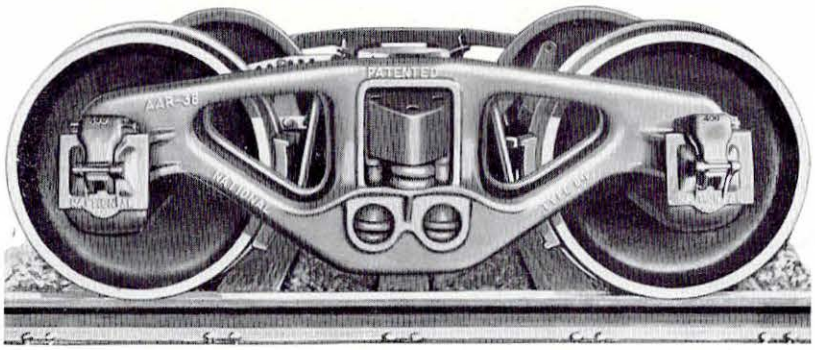


During the past few weeks we have six reported cases of low water, 4½" to 14" below high point of crown sheet on Syphon Equipped Locomotives while pulling freight and passenger trains. No boiler explosions, no personal injuries and the locomotives all were quickly returned to service after minor repairs.

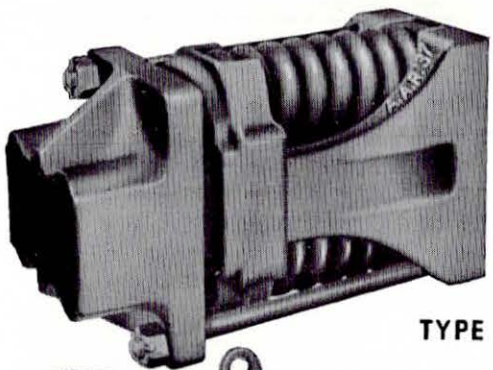
LOCOMOTIVE FIREBOX COMPANY

NEW YORK CHICAGO MONTREAL

NATIONAL PRODUCTS
Reduce Operating Costs

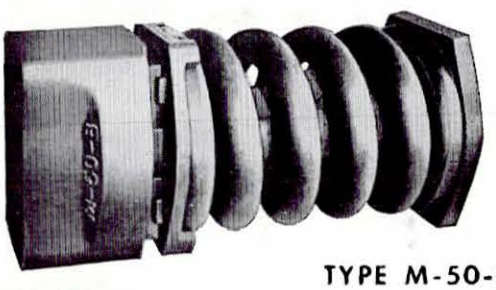


NATIONAL B-1 TRUCK WITH DUAL CONTROL

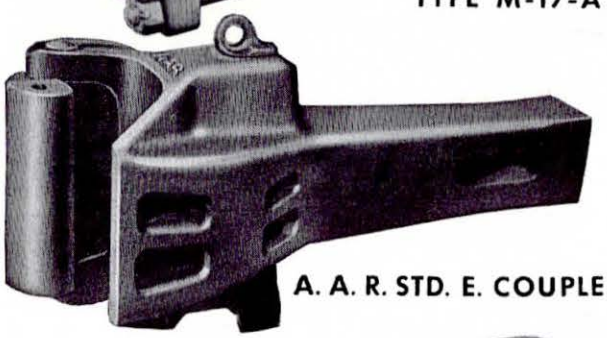


TYPE M-17-A

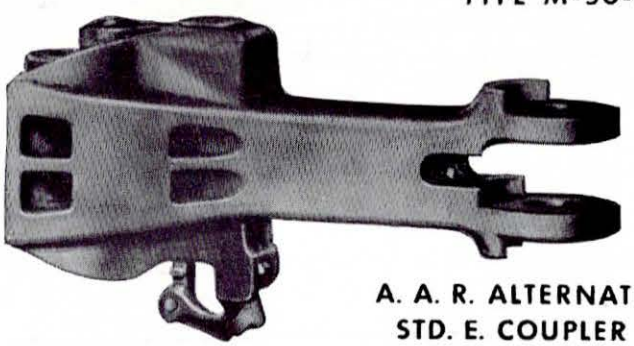
A. A. R. Approved Draft Gears



TYPE M-50-B

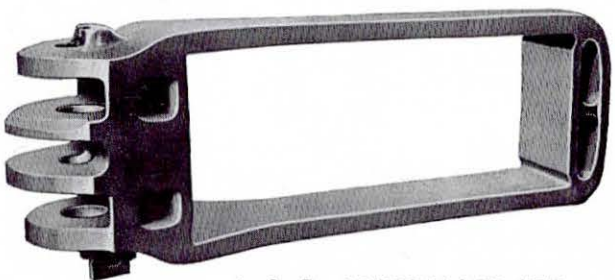


A. A. R. STD. E. COUPLER



A. A. R. ALTERNATE STD. E. COUPLER

A. A. R. STD. VERTICAL PLANE HORIZONTAL KEY YOKE



A. A. R. ALTERNATE STD. VERTICAL PLANE SWIVEL YOKE

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

No. 1

No. 2

No. 3

No. 4

The above types of cars are of *equal strength* . . . have equally attractive interiors and equally fine riding qualities. . . . The weight to be chosen depends on operating conditions . . . and is directly related to power economy. The exterior appearance is selected for its value in attracting the public.

Someone has aptly said:

"ADVERTISING bespeaks the policy of the Company which underwrites the advertisement. It should be truthful in what it says or implies. If it is not, the confidence of the readers is undermined and the integrity of the advertiser is in question."

The advertising of the Pullman-Standard Car Manufacturing Company stands now, as always, upon a basis of solid truth, established by engineering science and demonstrated by actual test.

First, painstaking care goes into every statement that this Company makes, so that it stands ready at all times to prove its assertions. It has always been a principle with the Company that exaggerated claims have no place in an industry where the safety of the public is at stake.

Then, it has been the Company's consistent policy for years to make its engineering data available to customers' engineering organizations for independent study and analysis. Naturally, the customer has a right to this information for his own protection and operating efficiency.

Finally, Pullman-Standard has submitted each of its several types of passenger cars to the A. A. R. for actual tests in the Altoona, Pennsylvania, laboratory, and has the enviable record of having each car more than meet the requirements. Never has one of its cars required rebuilding or strengthening. These tests have shown that no modern passenger cars have been built with equal safety of weights lower than those achieved by Pullman-Standard. Its cars are weighed on full-length scales.

All of this serves to prove the correctness of Pullman-Standard designs; based, as they are, on the experience of many years in engineering and building cars of all types and on the satisfactory performance of such cars. It is the kind of proof that instills confidence, giving the purchaser freedom from worry over possible failure in service and enabling him to be certain of safe, successful operation.

The cars shown on opposite page illustrate the several types of Pullman-Standard designs and the body structures are:

1. All aluminum alloys—the lightest weight of all.
2. Low alloy high tensile steel frame, sheathed with stainless steel—7% heavier than number 1.
3. Same as number 2, painted.
4. Low alloy, high tensile steel, throughout—8% heavier than number 1.

PULLMAN-STANDARD CAR MANUFACTURING COMPANY

CHICAGO · NEW YORK · CLEVELAND · WASHINGTON, D. C. · PITTSBURGH · BALTIMORE · BIRMINGHAM · WORCESTER, MASS.

San Francisco Sales Representative: Latham McMullin

PRACTICAL DATA FOR PRESENT PROBLEMS

Here are two books designed to help users of Molybdenum steels and irons to conserve all alloying elements, and possibly steel and iron, by getting the most in the way of strength, toughness and wear resistance with the lowest alloy content.

"MOLYBDENUM IN STEEL" covers the fundamental metallurgy of Molybdenum steels. Heat treatment – physical properties – applications – of a number of these steels are treated at length.

"MOLYBDENUM IN CAST IRON" covers the effect of Molybdenum in gray iron, giving suggested analyses for practical applications and detailed discussion of high strength (60,000 p.s.i. and up) irons.

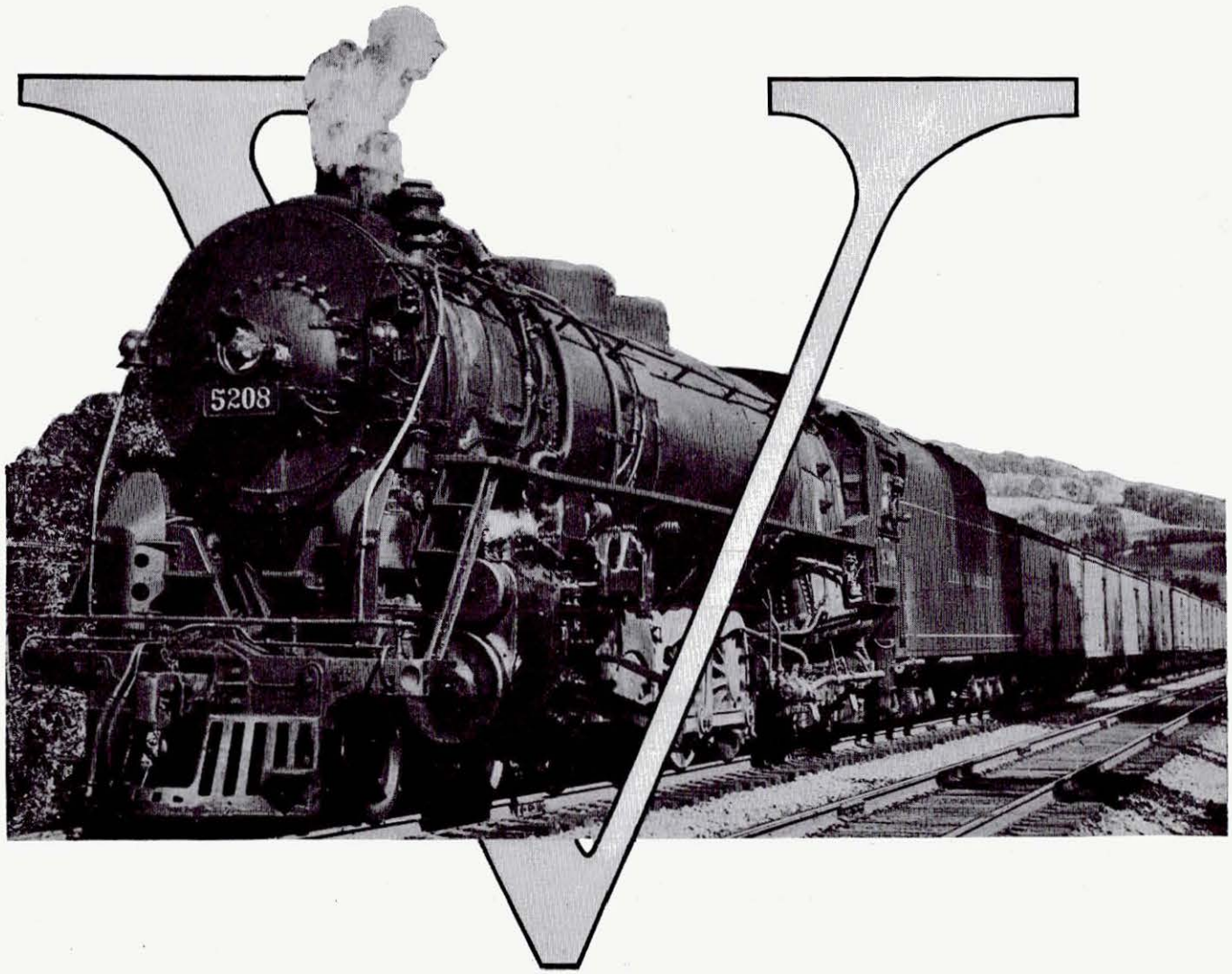
Both books will gladly be sent free on request.

Climax Mo-lyb-den-um Company
500 Fifth Avenue · New York City

MOLY

Rolling On to Victory

"RAILWAY" SPRINGS CARRY THE LOAD



THE supreme effort conducive to victory requires an all out employment of every piece of railway rolling stock in the country. Cars and locomotives provided with Railway Easy Riding Springs are well equipped to protect load, equipment and track during most intensive use.

AMERICAN LOCOMOTIVE COMPANY

Railway Steel Spring Division

30 CHURCH STREET, NEW YORK, N. Y.

PULLMAN INCORPORATED

SUMMARY OF ANNUAL REPORT FOR 1941

The 15th Annual Report of Pullman Incorporated, covering operations for 1941, has been presented to stockholders in advance of the annual meeting to be held in Wilmington, Del., on April 15, 1942. The report commemorates the 75th anniversary of the incorporation of The Pullman Company and participation with the railroads of the United States in three quarters of a century of transportation progress. Consolidated net income of $10,918,820 ($3.31 per share) after all charges and taxes exceeded 1940 earning of $7,484,125 ($1.93 per share). Although a substantial improvement was registered over 1940 results, this 1941 net income was still insufficient to generate any excess profit taxes. Total taxes of $10,973,525 paid or accrued by the Pullman group of companies in 1941, were the heaviest on record and absorbed one-half of consolidated net income for such taxes. Surplus was $48,936,567.

CONSOLIDATED INCOME ACCOUNT
FOR YEARS ENDED DECEMBER 31, 1941 AND 1940

EARNINGS:	1941	1940
	(Cents Omitted)	
FROM SLEEPING AND PARLOR CAR BUSINESS—		
Gross operating revenues	$ 70,174,056	$62,274,828
Less: Contract revenue payments to railroads	3,133,468	2,131,179
	$ 67,040,587	$60,143,649
Operating expenses	$ 53,925,974	$47,084,053
Provision for depreciation	10,489,970	10,088,288
Provision for Federal Income Taxes (Allocated portion—See Note)	891,693	727,447
	$ 65,307,638	$57,899,790
Net Operating Income	$ 1,732,949	$ 2,243,859
FROM MANUFACTURING BUSINESS—		
Net sales and operating revenues	$105,428,055	$63,097,790
Less:		
Cost of goods sold and operating expenses	$ 87,311,017	$52,139,242
Provision for depreciation	2,341,184	2,118,668
Selling and administrative expenses	2,557,419	2,322,526
Provision for Federal Income Taxes (Allocated portion—See Note)	3,960,585	1,450,737
	$ 96,170,207	$58,031,174
Net Manufacturing Profit	$ 9,257,848	$ 5,066,615
FROM INVESTMENTS—		
Income from securities and miscellaneous income	$ 720,460	$ 712,207
Profit on land and securities sold	32,703	1,441
	$ 753,163	$ 713,648
Less: Balances in closed banks written off, interest paid, and miscellaneous income deductions	$ 98,302	$ 28,802
Administrative expenses of Pullman Inc.	410,643	246,067
Provision for Federal Income Taxes (Allocated portion—See Note)	316,193	265,128
	$ 825,140	$ 539,998
Net Investment Income	$ *71,976**	$ 173,650
CONSOLIDATED NET INCOME, AFTER PROVISION FOR FEDERAL INCOME TAXES	$ 10,918,820	$ 7,484,125

NOTE: Total provision for Federal Income Tax on all corporations whose earnings are consolidated in this account, was $5,168,472 in 1941 and $2,443,313 in 1940. These amounts have been allocated to the earnings as distributed into the three divisions of the Consolidated Income Account. The amount allocated to "Earnings from Investments" embraces the tax imposed on inter-company dividends received by Pullman Incorporated. No excess profits tax has accrued in either of the years shown.

* Figures in *italics* denote deficit.

The following information is abstracted from a full report presented to stockholders:

SLEEPING AND PARLOR CAR BUSINESS

Car operations in 1941 were characterized by the largest traffic volume since 1930, sharply expanding operating costs, diminishing spread between income and outgo, and the smallest margin of profit since 1938. The major part of the 1941 increase in traffic volume reflects expansion of troop transfers and other Government travel generated by the defense program, which has continued at a rapidly accelerating pace during the opening months of 1942 as the result of the year-end transition to a war economy. The volume of regular commercial and tourist travel—the profit-producing end of the business—scored a small gain for the year 1941 as a whole, but the war has cut deeply into the tourist business, causing widespread cancellation of winter vacation plans.

The upward trend of operating expenses during this period of generally higher labor and material costs and heavier taxes was accelerated in the closing months of the year by retroactive application of higher wage and salary scales in this division to September 1, 1941, to conform with similar action taken by the railroads. Since the resultant increase in payroll expense applied over a full year will absorb the entire margin of net earnings in the car operating business, based on 1941 results, a petition was filed with the Interstate Commerce Commission on January 5, 1942, requesting approval of an increase of 10 per cent in all sleeping and parlor car rates, fares and charges. The request was granted on March 13 and the increases will be made effective shortly. The average Pullman fare of 6.035 mills per passenger mile in 1941 was the lowest in twenty years, due to the substantially enlarged element of low-rated troop movements.

There were no Pullman passenger fatalities in train accidents during 1941, marking the fifth year out of the last seven in which a perfect safety record was maintained. With

millions of passengers and billions of passenger miles handled annually, this is a record never even remotely approached by any of the other passenger transport agencies, and reflects a remarkable degree of railroad operating efficiency as well as the protective qualities of Pullman car construction and safety practices.

The traffic trend is clearly toward restriction of civilian travel, and while normal railroad and Pullman passenger service has thus far been well maintained, there is no assurance that partial curtailments will not become necessary from time to time in order to clear the tracks for troop trains or emergent freight traffic. A study of the American travel market, as measured by the volume of business (passenger miles) handled by the intercity transport agencies, indicates that the scheduled passenger-carrying agencies would be unable to accommodate more than a very small fraction of the present volume of automobile travel. For example, 2 per cent of the 1941 volume of intercity automobile travel, added to the sleeping and parlor car traffic for that year, would have increased the latter to the highest level on record. The possibilities for great expansion in Rail-Pullman traffic volume inherent in a situation of this kind are evident. However, it cannot be taken for granted that travelers forced to abandon certain agencies will be able to utilize other transportation facilities, or that such other facilities will be available for unrestricted civilian use.

SLEEPING CAR FACILITIES

The carrier subsidiary has sold to the railroads, for rebuilding into emergency coach equipment for transporting troops and munition workers, practically all of the inventory of parlor cars no longer required in the Pullman business. A considerable number of sleeping cars that have been retired from the active list in recent years, but not actually scrapped, have been reconditioned and, along with additional sleeping cars drawn from the active list, have been assigned to a special fleet numbering about 1,500 cars used exclusively in troop transportation.

The remainder of the Pullman fleet of sleeping cars, consisting now of about 450 of the new-type lightweight cars and about 4,600 standard-type heavyweight cars has been sufficient thus far to take care adequately of the increased volume of travel now being handled in regular Pullman service and has also been sufficient, in the peak periods of troop movement, to permit the drawing off of as many as 1,400 additional cars for use in troop transportation, without necessitating the cancellation of any of the regular sleeping car services on account of shortage of Pullman equipment, and only at coincident peaks of holiday travel and troop movement has there been any interference with the supply of Pullman equipment to meet the demand for extra sleeping cars.

MANUFACTURING BUSINESS

(1) Rail Equipment.

With wartime expansion of industrial activity lifting freight traffic volume to the highest level on record in this country, the railroads ordered more new freight cars in 1941 than in any previous year since 1924—with the exception of 1929. With Government aid in securing carbuilding materials, some progress is now being made toward running off the large backlog of orders carried over from 1941, which should clear the way for a revival of equipment buying in anticipation of further traffic gains.

The number of passenger cars ordered by the railroads in 1941 was slightly larger than in 1940, but less than one-fourth the average annual purchases of such equipment prior to the depression. Construction is proceeding slowly on passenger cars ordered in 1941 by the railroads and The Pullman Company, for which considerable material had been accumulated, and in part fabricated, prior to interference with completion of these cars by wartime allocations of certain materials for which acceptable substitute materials are not yet available. It now seems probable that with the rising demand of the Government for passenger train cars of every kind for troop transportation, materials to complete the cars already under way will be allotted, and that materials also will be allotted for proposed large Government purchases of cars built especially for troop transport.

Pullman-Standard Car Manufacturing Company has continued to secure satisfactory proportions of the freight and passenger car orders placed with commercial builders.

(2) Armament.

In the three-month period since war was declared, contracts or commitments for the production of armament taken by the manufacturing subsidiary have nearly quadrupled, amounting to approximately $269,000,000 as of March 1, 1942 and overshadowing the present rail equipment backlog of $67,000,000.

(3) Manufacturing Facilities.

The recent expansion of orders for both railway equipment and armament has necessitated the reopening of some of the manufacturing company's idle freight car plants, and the conversion of others into facilities for armament production.

In several plants facilities have been installed and are in active production on a wide range of armament work. Large additions to these installations are now under way, and a plant for construction of vessels for the U. S. Navy is to be erected in connection with the fabricating facilities at one of the plants.

RESEARCH

New machines and manufacturing methods are required for production of modern war material and in many cases the techniques developed by Pullman-Standard Car Manufacturing Company for this purpose represent definite innovations in the field of armament construction.

Supplies of various materials formerly employed in passenger car construction have been restricted or entirely cut off by wartime requirements for use of such materials in the production of armament. This has necessitated intensive development of proper alternative materials for completion of passenger equipment ordered for 1942 delivery. Various alloy steels and plastics have been substituted for aluminum in the new car interiors, and other steels without nickel or high chromium content are being employed wherever non-corrosive qualities are desired.

TRAFFIC AND OPERATING STATISTICS

Comparative Statement For Years Ended December 31

ITEM	1937	1938	1939	1940	1941
CARS OWNED	7,763	7,578	7,052	6,901	7,048
CARS OPERATED	5,500	5,124	5,100	4,990	5,303
CAR MILES	872,598,392	818,481,116	825,745,133	820,386,700	878,057,274
REVENUE PASSENGERS:					
Berth	12,849,076	11,338,471	11,549,947	11,077,546	13,166,554
Seat	4,895,492	4,201,378	4,105,188	3,687,770	3,744,167
Total	17,744,568	15,539,849	15,655,135	14,765,316	16,910,721
REVENUE PASSENGER MILES	9,170,428,451	8,269,882,057	8,485,399,123	8,213,878,992	10,070,406,876
OPERATING REVENUE*	$ 64,287,199	$ 58,924,968	$ 60,664,266	$ 60,143,649	$ 67,040,587
Average per Car	$ 11,688.58	$ 11,499.80	$ 11,894.95	$ 12,052.84	$ 12,642.01
EXPENSES**	$ 59,875,601	$ 57,558,097	$ 58,573,975	$ 57,899,790	$ 65,307,638
Average per Car	$ 10,886.47	$ 11,233.04	$ 11,485.09	$ 11,603.16	$ 12,315.23
NET OPERATING INCOME†	$ 4,411,598	$ 1,366,871	$ 2,090,291	$ 2,243,859	$ 1,732,949
TRAFFIC AVERAGES:					
Average Operating Revenue per Passenger	$ 3.62	$ 3.79	$ 3.88	$ 4.07	$ 3.96
Average Net Operating Income per Passenger	$ 0.25	$ 0.09	$ 0.13	$ 0.15	$ 0.10
Average Net Operating Income per Car per Day	$ 2.20	$ 0.73	$ 1.12	$ 1.23	$ 0.90
Average Mileage per Car Operated	158,648	159,722	161,914	164,396	165,577
Average Journey per Passenger (Miles)	517	532	542	556	596
Average Miles per Car per Day	435	438	444	449	454
Average Loading per Car (Passengers)	10.51	10.10	10.28	10.01	11.47

*From all sources after deducting Contract Revenue Payments to Railroads.
**Including allocated portion of Federal Income Taxes.
†After provision for Federal Taxes.

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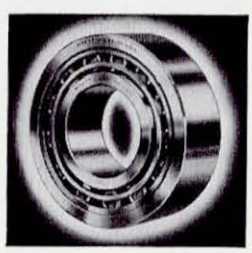

Our young soldier's buddies in Department 9 at Hyatt are justly proud of him—and he can be equally proud of them. For they are soldiers, too ... in the front lines of industry ... working with might and main, day and night ... keeping a steady flow of vital parts for the fighting machines that our fighting men are using with such telling effect! Hyatt Bearings Division, General Motors Corporation, Harrison, N. J., Chicago, Pittsburgh, Detroit and San Francisco.

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Vol. 112 March 28, 1942 No. 13

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An article describing the manner in which the construction of a relatively large mileage of trackage, essential to the proper functioning of an important defense establishment, was rushed to completion during the winter months under severe difficulties.

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New 400's Give Unique Service 650

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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The Week at a Glance

McADOODLING THE LCL: Our observer of the competitive traffic situation, in his "box" on the editorial pages herein, looks with misgivings on the ODT order setting minimum tonnage for l. c. l. cars. A coercive order of this kind serves notice on carriers and shippers alike that confidence is lacking in the effectiveness of their co-operative efforts. And yet, their co-operation—despite this cavalier treatment of it—is just as necessary as ever. It is questionable whether the ODT needs coercion. There is no question that it *must have* co-operation. Our observer believes the transportation community must redouble its educational efforts in order to offset the discouragement of individual initiative which otherwise must flow naturally from ODT pre-emption of the brain-work in dealing with this traffic.

●

TRUCKS' TURN COMING: Commissioner Rogers was speaking in New York the next day after ODT announced its minimum merchandise carload order—and to hear him tell it, the trucks can look forward to the same kind of regimentation that has been applied to the railroads. The supply of trucks is going to diminish in the face of increasing traffic, and this is going to require doubling-up and other pooling devices. Whether the long-hauls were going to be taken from the trucks and handed to the railroads, Mr. Rogers was not able to say; but he indicated that such a prospect would not unduly disturb him.

●

PAYROLL PROSPERITY: The new wage rates showed up in the statistics, for the first time, in December and an editorial herein reveals how they came out. The average passenger engineer drew $2.30 per hour *straight time* in December. Passenger firemen average $1.93, passenger conductors $1.82, and through freight engineers $1.61. Largest average monthly earnings were those of local freight engineers—$389—but they had to put in considerable overtime to reach that figure. Passenger engineers average $366 for the month, passenger conductors $333, local freight conductors $340, and through freight engineers $313. Meantime dispatchers have got themselves a $25 monthly raise. Railroad employees are now drawing about 25 per cent *more* than in the 1929 hey-day, while the 1941 average "wage" of capital was 23½ per cent *less* than in '29.

●

TOPSY-TURVY ECONOMICS: Lauchlin Currie, assistant to the President of the United States, was quoted this week by the New York Times as saying that the standard of living depends primarily on national "resources" and "man-power." According to this revelation, China and Russia must be enjoying the highest standard of living in the world. The economists who, heretofore, have accorded this happy status to the U. S. A.—and who have ascribed it to our high per capita accumulation of capital—are now outmoded. After the war, according to Currie, this nation can prosper if it increases its consumption and doesn't save too much. Those who do not relish the idea of having Mr. Currie and his ilk settle this country's hash for good and all, may well ponder what steps they can take to get other voices into the economic "planning" of the nation's future.

●

RR LABOR NOT GUILTY: Railroad labor will probably not insist on overtime payments to the detriment of the war effort, J. G. Luhrsen told a Senate subcommittee investigating war production this week. He went on to explain that he referred to such a provision as double time for Sunday work—and he made the usual disclaimer that the unions are getting exorbitant wages. Having to disagree with Mr. Luhrsen and the railway unions as often as we do, it is a pleasure for a change to note on this occasion that these unions are *not* generally guilty of the particular sins which are plaguing so many war industries—namely, the exaction of penalty payments for employees who work Sundays but have other days off; and the insistence on time-and-a-half after 40 hours' work in any one week. But "full crew" requirements, the sharp distinction between road runs and switching, and the mileage basis of pay (equaling 100 miles to 8 hours instead of a more reasonable 4 or 6) aren't helping the war effort any.

●

ORDNANCE PLANT AT ——: Nips and Nazis won't get tips for their pineapple punks from the illustrated article on the railroad layout at a modern ordnance plant on other pages in this issue—because we don't let on where the plant is. But railroad and government men who may later on have similar jobs to do will get plenty of helpful suggestions from the account of how this 119-mile railroad installation was laid down in spite of adverse conditions. The job, incidentally, gave further valuable experience with mechanized grading.

●

HOW & WHERE SP TRUCKS: The far-reaching motor transport operations of the highway-pioneering Southern Pacific are described in specific detail in a paper herein by Vice-President L. B. Young of the company's truck subsidiary. "The railroads today are not fighting the motor trucks," says Mr. Young, "they are using them. They are not merely in the railroad business. They are in the transportation business and whatever new transportation machinery may be developed, the progressive roads stand ready to adapt it to their operations."

●

MORE EQUITIES WALK PLANK: The I. C. C. has issued a final reorganization plan for the Soo Line, reviewed elsewhere herein, in which capitalization of 169 millions, plus 28 millions of unpaid interest, is scaled down to 95 millions and fixed charges are all but exterminated. Following its confirmed habit in these cases, the equity holders in the old company are sunk without a trace.

T. P. & W. SEIZURE: Government officials directed the digit of scorn at George McNear because he wouldn't arbitrate his labor dispute on their terms—although the law gave him a clear right to decline arbitration if he so desired. The leading editorial herein looks at the moral position of the finger-pointers, and property-seizers and finds them just as derelict in not "fact finding" this case as they could possibly accuse McNear of being for not arbitrating it. More than that, the government scanted its primary duty of preventing violence — a far more fundamental obligation than any which it is possible even to *accuse* McNear of not performing. Moreover, what was the attitude of these government officials *when it was union leaders who refused to arbitrate?* Remember?—a "fact finding" board was told where it got off, and those who did the telling didn't even get scolded—let alone "taken over."

●

MAY NOT LAST LONG: John Barriger, in taking over the T. P. & W. as federal manager, retained the company's officers, excepting President McNear, and restored striking employees with their seniority status as of the date of the strike. The report published herein, from our transportation editor on the scene at Peoria, draws attention to the possible temporary character of federal possession. The Wall Street Journal, commenting editorially on the case, expressed the hope that the War Labor Board, in weighing the controversy, may see fit to shed some much-needed light on the "featherbed" rules which were the cause of the ruckus, but it isn't very hopeful on that score. Neither are we.

●

1941 PURCHASES: Total buying for the railroad transportation industry in 1941 adds up to one and two-thirds billion dollars. Purchases from manufacturers came to better than a billion and a quarter, which was about 47 per cent more than in 1940. The details are tabulated on another page herein.

●

MISCHIEF NOT INTENDED: The legal department of the ODT is working on a bill which would be somewhat more specific in defining the terms under which the government may take over transportation companies as a war measure, thus modifying the 1916 statute which now governs. A report got around this week that an ODT bill to fix compensation of carriers taken over by the government had been submitted to Congress, but this was denied.

●

FOREWARNED IS FOREARMED: Planning and research to be ready for what lies ahead is drawing wide attention. General Motors Chairman Sloan, in his annual report, suggests that industry had better do this job or the government will—and, of course, it already is, and that intensively. The British railways have set up a research organization under Sir Ernest Lemon of the L. M. S.

oseph B. Eastman Asks Railroad "Super-Performance"

Speaking before an audience that filled to capacity the Grand Ballroom of the Palmer House, Joseph B. Eastman, director of the Office of Defense Transportation, told his listeners that one of his duties is to assure that the carriers receive the materials and equipment necessary to enable them to carry the steadily increasing burden of traffic. Yet he warned that there will be no abundance of such materials and equipment, and that, in fact, the stocks that may be found to be available may be such as to make it difficult for the railroads to fulfill the demands made upon them. Mr. Eastman spoke in part as follows:

"Transportation plays a peculiarly vital part in the war effort. It enters into modern production at every stage, from the time the raw materials leave the ground until the finished product reaches its final destination. Troops and munitions would be useless without transportation, and so would the workers in our great new war-production plants. No one who gives a moment's thought to the matter can possibly doubt that, of all the indispensable parts of the war effort, transportation is the most extensive and pervasive.

What's Ahead

"All this is so clear that it needs no demonstration. Yet there is danger of trouble ahead for our transportation service . . . . . some may entertain the idea that a shortage of transportation is something that the country can endure, like a shortage of sugar, without harm to the war effort. So far as the transportation of passengers is concerned, this may, within limits, be true, but I fear that it is not true when it comes to the transportation of freight. . . . . We are approaching a time when the freight traffic that our carriers will be called upon to move will be made up mostly of commodities that enter into the war effort in one way or another, and the balance will be commodities, like food and clothing, that are essential to the well-being of the population. . . . . .

Must Conserve Materials

. . . . . Conservation . . . . . is something which the railroads must perforce take to heart.

"Turning to a subject that is of more immediate concern to railroad engineers, it is quite clear that the roads will not have all the rail and track materials that they would like to have, or even that they will actually need. It will, therefore, be necessary for them to use what they can get in the best possible way and with the demands of the war effort uppermost in their plans. The problem will be to produce the greatest possible improvement of transportation facilities per unit of material used.

Super-Performance

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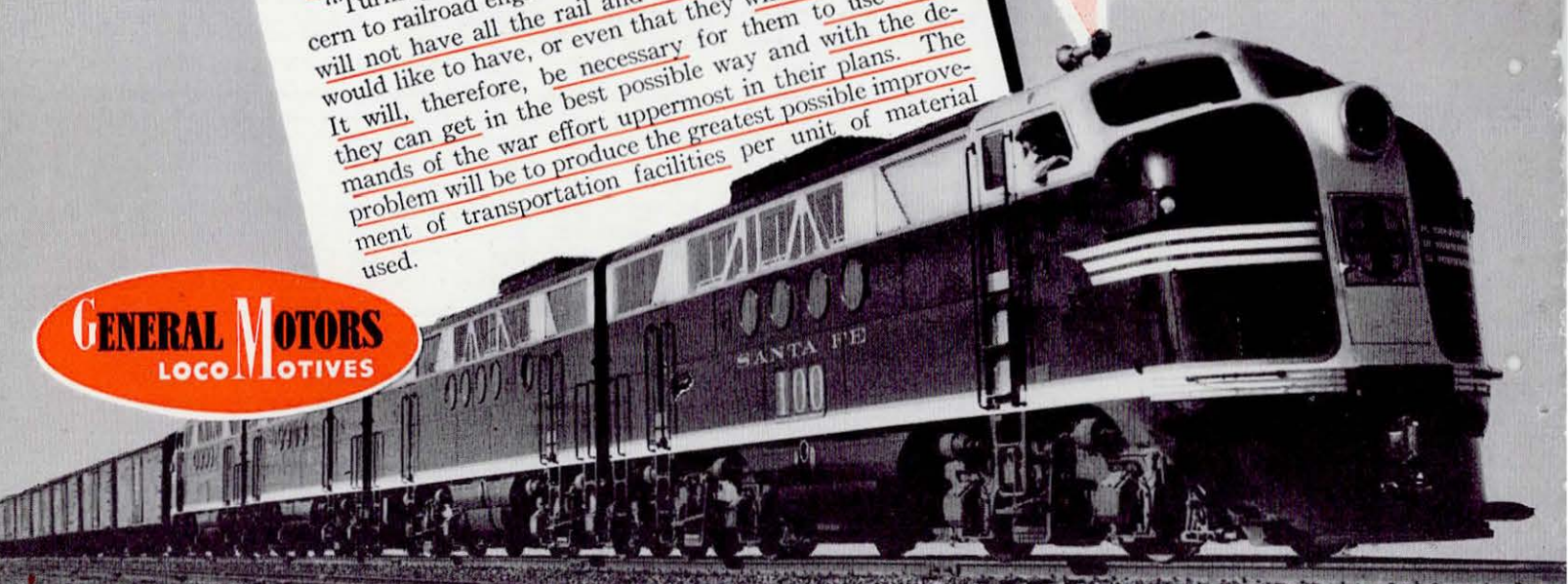
Reduction in train miles as much as 50 per cent —increased hauling capacity—faster schedules with fewer service delays — high availability.

For each Diesel operated, release as many as five steam locomotives for other important services — increased carrying capacity of existing track facilities without expensive replacements with heavier rail or rebuilding of bridge structures.

One ton of materials in a GM Diesel locomotive will do the work of more than two tons of materials in a steam locomotive.



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T. P. & W. Taken Over

The taking over of the Toledo, Peoria & Western by the federal government bears some resemblance to the attempt of the Office of Price Administration a couple of weeks ago to supersede the Interstate Commerce Commission as the arbiter of freight rates. That is to say, the President and the War Labor Board have wide and indefinite powers in the handling of labor disputes —just as the O. P. A. has with respect to prices. When the attempt is made to exercise these powers in areas where rights and duties of the parties are clearly defined in existing statutes, disagreement is inevitable.

The Railway Labor Act directs the National Mediation Board, in the event that a labor dispute threatens "substantially to interrupt interstate commerce to a degree such as to deprive any section of the country of essential transportation service" to notify the President, so that he may appoint a "fact finding board" to investigate and make public the merits of the controversy. The Mediation Board did not so notify the President in this case, and no "fact finding board" was appointed. Instead, the President, the Mediation Board, the Office of Defense Transportation, and the War Labor Board all urged upon President McNear of the T. P. & W. that he submit the dispute to arbitration—and the President and the War Labor Board were greatly provoked that he did not do so. And yet, the law certainly put no more obligation on Mr. McNear to arbitrate than it did on the Mediation Board and the President to establish a "fact finding board."

Why No "Fact Finding?"

Those disposed to criticise Mr. McNear for his reluctance to entrust his case to arbitration should also inquire into the motives which led the Mediation Board to neglect initiating "fact finding" machinery in this case. A plausible explanation going the rounds is that there are those who would not relish the publicity which a "fact finding" report would give to the "featherbed" rules. The proceedings of arbitrators are more star-chamber in character, with little or no publicity. If this is not the explanation for the failure to name a "fact finding board," then what is the reason? Certainly it cannot be that the railroad was not deemed sufficiently important to the transportation service of the country to warrant the appointment of such a board, because, if that were so, then there could be no reason for the President to take over the road in the exercise of his war powers.

The obligation, either on Mr. McNear to arbitrate or on the President to appoint a "fact finding board," however, was optional rather than a duty required by statute—and the disinterested observer may take his choice as to who was right and who was wrong. But how about the violence which undeniably attended this strike? Certainly the prevention and the punishment of violence to persons and property is the very first function of government. If it does not satisfactorily fulfill that most elementary duty which is peculiarly its own, how can its officers consistently cast reproaches upon other parties to the controversy, whose errors, if any, can be only a matter of opinion?

Does Government Favor Violence?

There is no doubt that violence was committed in this strike, nor that, except for the violence, the railroad could have continued to operate successfully, without serious delay to traffic. That is to say, if the government had performed its elementary duty, there would have been no interruption to service of a character to justify the President in commandeering the property. It may be said, therefore, that the T. P. & W. has been taken over—punishing Mr. McNear, as an indirect result of the failure of the government to do its duty. The obligation, if any, on Mr. McNear to submit this dispute to arbitration admits of some doubt. That upon the government to put down violence admits of none.

Incidentally, the strong statements of governmental authorities against Mr. McNear for refusing to arbitrate this case make an amusing contrast with the attitude of these self-same officials when it was the unions who refused to entrust the wage dispute last fall to arbitration. Were these union officials criticised or did the government "take them over"? Of course not. Indeed, they were not even criticised when they flatly refused to accept the wage award made by the President's "fact finding board." Instead, the President called the "fact finding board" back and caused it to resume its labors until, at length, it had secured concessions from the railroads sufficient to satisfy union demands.

Can it be that there is one law in this country for employers and quite a different law for organized labor —as on the continent of Europe there is one law for Germans and another for subject peoples? If so, this is a strange state of domestic affairs to be tolerated in a nation which has consecrated its wealth and its blood to bringing the rule of law and decency into the conduct of international relations.

Railroad Wages Under The New Scale of Pay

The wage increases agreed to by the railroads came into full effect last December—and complete figures for that month just recently available reveal for the first time, conclusively, just what these increases will mean to employees in earnings and, to the railways, in expense. For example, the average railroad employee in December, 1941, received average hourly compensation of 85.1 cents—as compared with 76.4 cents in December, 1940—an increase of 8.7 cents or 11.4 per cent. The average monthly compensation per employee in December, 1941, was $189.60—as compared with $163.14 in December, 1940.

The figures of earnings per hour are computed on the basis of *hours paid for* which are known to be considerably in excess of the hours actually worked. For example, in the case of train and engine service employees—21 per cent more hours of "straight time" (i. e., not overtime at penalty rates) was paid for in December than was actually worked. If complete figures were recorded of the hours actually worked by railroad employees (including penalty overtime), it is certain that the earnings per hour would be shown to be considerably in excess of the 85.1 cents reported under the system now in use. It is well to bear this condition in mind when comparing railroad wages with those of other industries where average hourly earnings are computed on a basis of time actually worked.

In December, 1929, the average hourly earnings of railway employees were 68.4 cents (computed in exactly the same manner as that employed to arrive at the December, 1941, figure of 85.1 cents). That is to say, hourly compensation of railroad employees on the new scale which went into effect in December, 1941, is almost 25 per cent greater than it was in 1929. Total revenue traffic (freight and passengers combined) on the railroads was 4 per cent greater in 1941 than in

A Step Toward McAdooism?

A blanket, conforming to the contours over which it is draped, makes a more effective covering than a piece of beaver board. So, it has seemed to your observer, several hundred thousand shippers and transportation officers striving for l. c. l. car efficiency would accomplish more than if two or three ODT officials tried to do the job by issuing drastic country-wide orders from Washington. However, the driving determination of officialdom, which usually prefers "telling them" to persuading them, has won a victory—and rigid minimum tonnages for l. c. l. cars have been prescribed.

Did we say "rigid"? Well, that isn't quite accurate. There are many exceptions. If a car contains military materials, it may run light. Or, it can go light if no other carrier can be found to take the below-minimum freight. Or, ODT permission may be sought to let the car move short of its arbitrary minimum load. A large number of expedients are listed which may be availed of in order to meet the requirements laid down by the ODT—which will do the necessary thinking, action being left to people on the firing line.

Most of the duties toward securing maximum carloads are still (as they must be) left to local transportation people, but the *responsibility* and the *initiative* have been taken over by the ODT. Isn't this the way they railroaded under McAdoo?

Your observer does not question the sincerity of Mr. Eastman or his associates. Mr. Eastman, indeed, has pointed out that there are so many exceptions to the order, that it can be defeated by carriers which take technical advantage of them. He believes the carriers will continue to co-operate with him, as indeed they will and should. But why, then, so largely take from thousands of individuals all over the country the *incentive* which responsibility gave them? Will not many of these people now, naturally, conclude that—since goals for carloading have been set in Washington—their duty ceases when these minima are attained?

It will be unfortunate if this attitude gains currency—and the railroads and shippers must fight it, despite the plain implication of the ODT order that it does not consider their co-operative efforts to be sufficiently fruitful any longer to place reliance in them. The l. c. l. situation is, after all, however, only a segment of the transportation picture and, if the disease of rigid bureaucratic coercion can be isolated and allowed to run its course here, the remainder of the body may still be preserved uncontaminated in its state of vigorous health.

By assuming responsibility for economical handling of l. c. l. by the railroads, the ODT cannot restrict itself to dealing merely with symptoms—which, in many cases, is all that lightly loaded cars amount to. Suppose a railroad car destined for a point a thousand miles away is light. Is the railroad to be required to turn over its tonnage to a truck for this long haul? If so, what kind of transportation efficiency will that be? There is a truck and a forwarder aspect to l. c. l. inefficiency, and the railroads and the shipping public will have the right to expect that the ODT officials in charge of traffic direction be no less firm on that side than they have been in the case of the railroads.

By thus imposing their wills upon others, the ODT people have assumed responsibility for bringing rationality into the wasteful and confused picture of merchandise traffic. If they succeed, they will bring everlasting credit upon themselves. If they fail, their failure will be on their own heads. It is to the advantage of the nation, and to the carriers and the shippers, that they succeed. Difficult though it be, that conclusion must be "sold" to transportation and shipping people, so that their co-operation may continue despite the fact that an important section of the ODT has, by its mandatory order, served notice that it is dissatisfied with co-operation as an incentive, and prefers coercion instead.

1929, but the railroads' charges to their customers were more than a billion dollars (16 per cent) less in 1941 than in 1929. Net railway operating income—that is, the aggregate "wage" of railway capital, was 275 million dollars *less* in 1941 than in 1929. The return on the investment in 1941 was 3.79 per cent, and 4.95 per cent in 1929—**a decline in the investor's average "wage" of 23½ per cent in the same period that the average wage of labor was being raised 25 per cent.** The wage increases of last December brought railroad employees in train and engine service to new high levels of hourly and monthly earnings, as the table herewith reveals. Passenger locomotive engineers are now earning $2.30, on the average, per hour ("straight time," not including additional earnings at penalty overtime rates). Passenger firemen are earning at the "straight time" rate of $1.93 for each hour actually worked, while passenger conductors are receiving $1.82 and freight engineers $1.61.

In monthly earnings, local freight engineers surpass all other classes of train and engine service employees with December earnings averaging $389—arising primarily from their relatively long weekly hours and the overtime they are paid for at penalty rates. Passenger engineers, working far fewer hours, received $366 on the average in December. Local freight conductors, passenger conductors and through freight engineers are the other categories of train and engine service employees who are earning, on the average, more than $300 per month.

Average Train and Engine Service Earnings and Hours in December, 1941

	No. Working at Mid-Month	Avg. Straight Time Hourly Earnings	Avg. Monthly Straight Time Hours per Employee	Avg. Overtime and Other Extra Payments per Employee	Avg. Monthly Earnings per Employee (Incl. Overtime)
Passenger Conductors	7,174	$1.82	171	$22	$333
Through Freight Conductors	12,067	1.40	179	34	285
Local Freight Conductors	7,279	1.16	232	71	340
Passenger Baggagemen	4,179	1.41	169	14	253
Passenger Brakemen	9,795	1.41	160	16	243
Through Freight Brakemen	30,940	1.15	155	25	204
Local Freight Brakemen	17,454	.95	210	56	256
Yard Conductors	18,397	1.09	222	18	260
Yard Brakemen	48,205	1.02	193	14	210
Passenger Engineers	9,218	2.30	148	26	366
Through Freight Engineers	17,534	1.61	168	41	313
Local Freight Engineers	7,817	1.33	225	90	389
Yard Engineers	17,951	1.14	213	22	265
Passenger Firemen	8,501	1.93	138	20	287
Through Freight Firemen	19,715	1.28	149	27	218
Local Freight Firemen	8,152	1.04	210	65	285
Yard Firemen	19,304	.92	196	16	196

NOTE: The averages of monthly hours, overtime payments and total wages were arrived at by dividing the aggregate figures by the number of employees working at the middle of the month. These averages therefore, reflect the hours and earnings of full employment, and not of employees who worked only fractions of the month. The computation of average straight time hourly earnings is made by dividing straight time hours actually worked into total straight time compensation.

Such earnings—exceeding as they do those of the average in many learned professions—are not comparable to the sometimes spectacular hourly pay of wage-earners in some other occupations, such, for instance, as building construction. In such industries, highly-paid work is often seasonal in character—and may be dependent upon the weather. On the railroads, on the other hand, these attractive wages may be earned year in and year out by the employees with high places on the seniority roster. Under the workings of the seniority system, the difference between good times and bad times, as far as railroad train and engine service is concerned, is reflected rather in the number of employees on the payroll than in the hourly or monthly earnings per employee.

Passenger Car Priorities

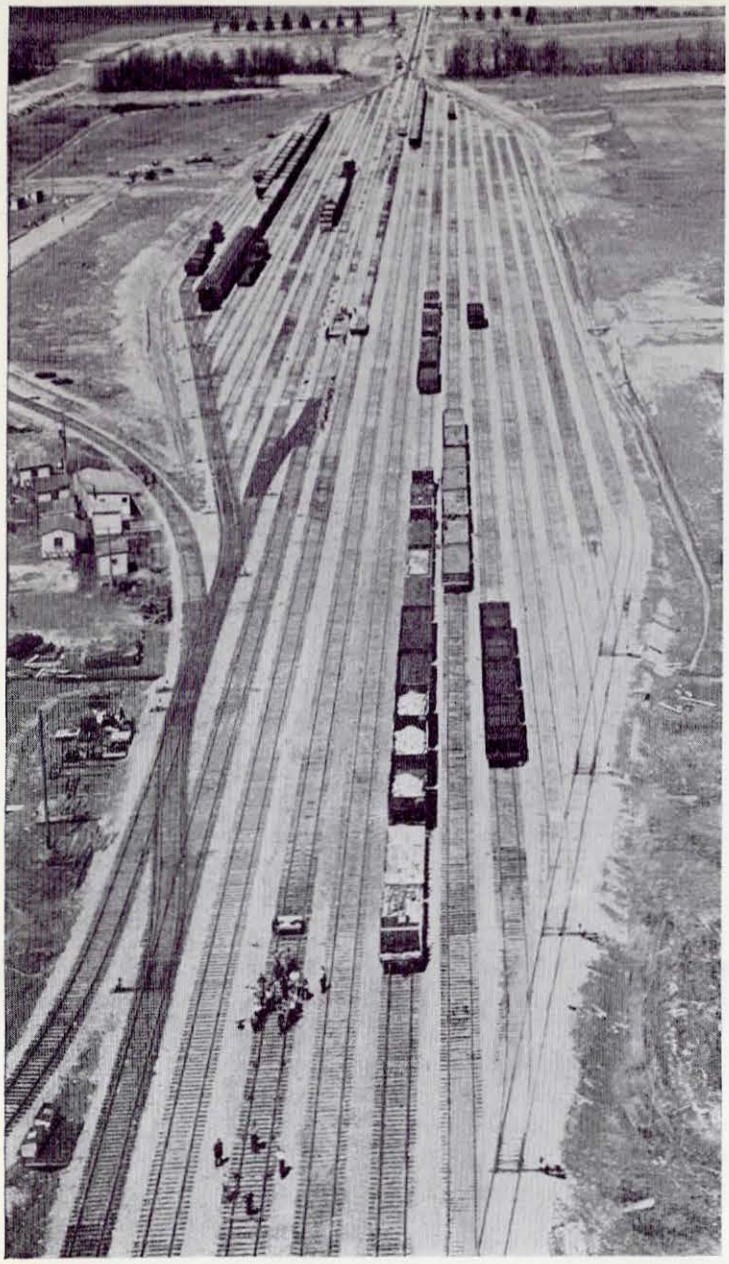
What about priorities for maintaining passenger cars? Fortunately, in spite of the difficulties encountered by the railroads during the '30's, competitive conditions forced them to make radical improvements in their passenger-carrying equipment. Few decades have witnessed more spectacular improvements. These included the introduction and extended use of air conditioning, the development of the highspeed streamliners and the modernization generally of the passenger cars.

The building up of our war production program has greatly increased the demands upon passenger service, and there seems little prospect of abatement in travel intensity. To this has been added the movements of hundreds of thousands of service men, as they have been enlisted, trained and speeded toward the fighting fronts. The rubber shortage also promises to force the transfer of much passenger traffic from buses and private cars back to the rails.

Emphasis on claiming priorities for the maintenance, repair and building of railway equipment has thus far been placed largely on freight cars and locomotives. The authorities, however, seem to be awakening to the fact that the maintenance of passenger service is quite as essential as is freight service, vital as that may be.

Consider one phase of the problem only. Certainly it is essential to maintain good lighting on the passenger trains, except for brief periods during possible blackouts. Surely, also, this can best be done by maintaining the electric lighting equipment which has been installed at so great a cost and has been developed to a high degree of perfection over several decades. Considerations of safety alone would prevent going back to candles and oil lamps. Materials high on the priorities list are required to maintain the electric lighting. These materials bulk small, however, as compared to other usages. The railways and railway supply manufacturers are being embarrassed because of the railway requirements for passenger equipment purposes being tucked down in A-10; this seems an almost hopeless position unless special allocations are obtained.

The old saw, "the wheel that does the squeaking is the one that gets the grease" was never more true than at present. Since railroad operation—passenger as well as freight—is essential in the emergency, no stone should be left unturned in the effort to keep them in the best possible physical condition.



Aerial View of the 800-Car Classification Yard, Taken While Construction Work Was Still in Progress

Army Constructs 119-Mile Railroad at Ordnance Plant

Extensive trackage required at one of country's largest shell and bomb-loading centers was constructed partly during the winter months under severe difficulties

To avoid giving information that might be of value to the enemy, this article does not indicate the location of the plant or the names of the connecting railroads, nor does it give details of the exact layout of the plant and its trackage. However, the absence of this information in no way detracts from the primary purpose of the article, which is to describe the manner in which the construction of a relatively large mileage of trackage, essential to the proper functioning of an important defense establishment, was rushed to completion under highly adverse working conditions.

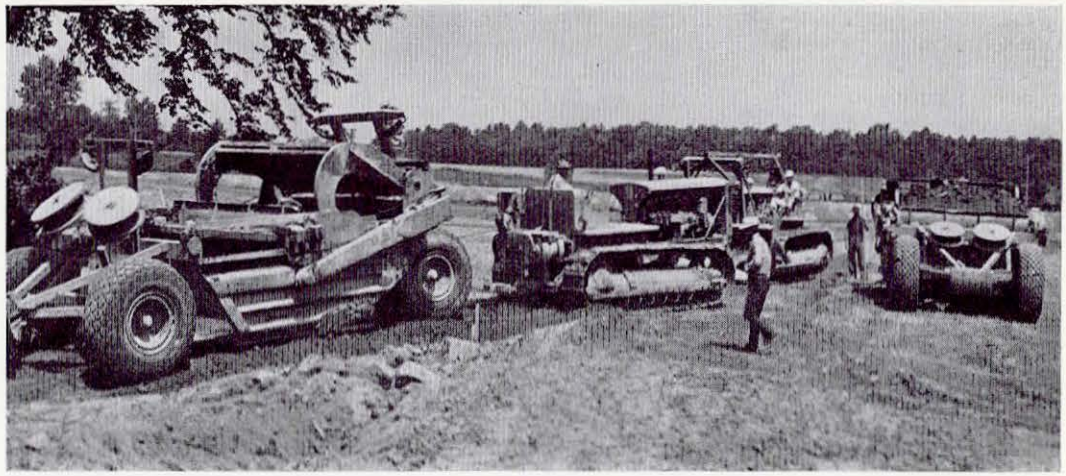
AMONG the army ordnance facilities that have been created as part of the national defense program is a huge munitions manufacturing and storage plant, covering approximately 36 square miles of rolling farm land, which has its own railroad system, complete with two classification yards, a despatching system involving centralized traffic control, and all the other facilities required for independent operation. Of special interest from the railroad standpoint are the standards to which the railway facilities were built and the fact that the permanent trackage required, totaling about 119 miles, was built for the most part under highly adverse conditions, for, since time was the essential factor, the work was pushed steadily during the winter of 1940-41 without regard to bad weather or to the difficulties presented by extremely wet conditions and the lack of adequate access roads. That the obstacles encountered were surmounted with unqualified success is evidenced by the fact that the munitions plant was placed in partial operation about eight months after ground was broken.

One of the Largest in U. S.

The functions of this plant and depot are the loading and storage of shells and bombs, and it is one of the largest loading plants in the United States. The reservation on which it is situated, which is roughly rectangular in shape, occupies approximately 23,000 acres of land. A primary consideration in locating this plant at its particular location was the fact that the area is served by two trunk-line railroads, over one of which a third line has trackage rights.

A brief description of the nature of the manufacturing and other operations involved at the plant will suffice to explain the need for railroad transportation on a large scale in carrying out these operations. Materials destined for processing at the plant, including shell and bomb casings and explosives, are shipped to the site over the connecting railroads and are stored until used, there being a storage area for each of the materials involved. In the manufacturing operation, these materials are removed from storage and transported to the place of assembly, known as a load line, after which the finished ammunition is taken to the "suspense" storage area, so named because it is held here until it has passed certain tests. From the suspense storage the shells or bombs are transferred to a permanent storage depot or are shipped elsewhere for use or storage.

It is apparent, therefore, that all materials used at



The Grading Operations Were Highly Mechanized and Were Carried on Night and Day for Three Shifts

the plant are generally handled four times, namely, (1) into storage on arrival; (2) out of storage and into the assembly line; (3) from the load line to the suspense storage area; and (4) to permanent storage or into distributive channels. In all of these movements the materials are handled from platform to platform by railroad, except that ammunition moving into permanent storage is handled from railroad sidings into the storage area by means of trucks.

Has Two Parts

In reality, the plant has two separate and distinct parts, namely, the manufacturing component, known as the ordnance plant, and the permanent storage area, known as the ordnance depot. The former, while owned by the federal government, is operated by a contractor, while the latter is under the jurisdiction of the army. The depot occupies a relatively small proportion of the total acreage, the remainder being devoted to the facilities of the ordnance plant. Since this undertaking was first projected, it has been enlarged several times and in various respects, the latest step of this nature being the acquisition of some additional acreage adjoining the area for the purpose of providing increased storage capacity.

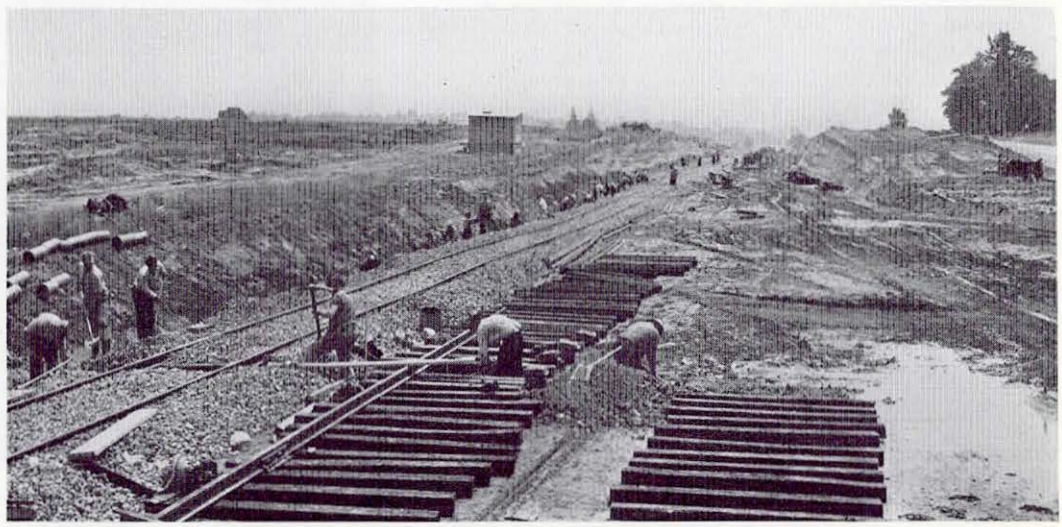
As used in this article, the term "plant" refers to the manufacturing area, including its storage and other facilities, while the term "depot" refers to the permanent storage area.

At each end of the area occupied by the plant and depot a double-track connecting line was constructed between the two railroads; hence, the area is enclosed within a rectangle of railroad lines. The connecting line at one end passes through the center of an 18-track classification yard with a capacity of 800 cars, which serves the plant, while at the other end there is a 150-car classification yard where loaded cars from the depot area are handled.

Network of Tracks

Within this rectangle there is a network of railroad lines, which is designed to provide the necessary connecting links between the different storage areas, the assembly plants for munitions (load lines), the classification yards, other facilities, and the outside connecting lines. There are separate storage areas in the plant for bomb and shell casings, smokeless powder, high explosives, and fuses and boosters, and a suspense storage area. Each of these consists of a group of storage structures with loading platforms, which are served by the necessary tracks. Also there is an ammonium nitrate plant and an area where are manufactured artillery primers, boosters, fuses, percussion elements and detonators, and service tracks were also necessary at these locations.

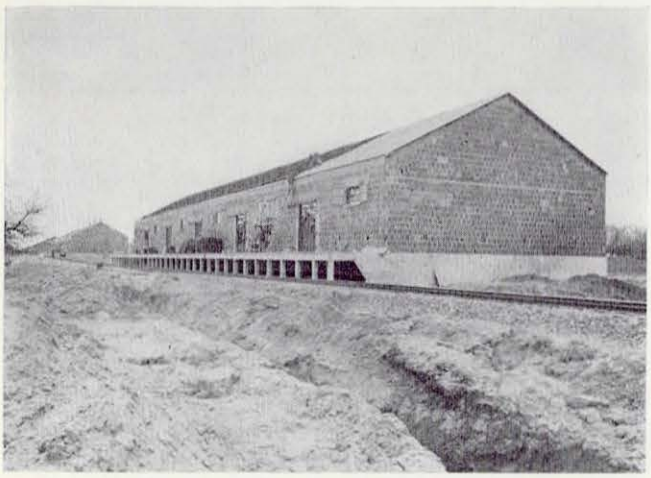
There are a number of load lines at the plant, some for shells and some for bombs. These are generally about 4,000 ft. long and they usually embody two parallel tracks, one for bringing in the shell or bomb casings and the other for delivering the explosive. Flanking



Wet Cuts Such as This One Were a Common Occurrence. Note that Work Is in Progress on a Subdrainage System

these tracks are lines of buildings in which the work of assembling the component materials is carried out.

The railroad trackage in the plant and depot includes several running, or "main," tracks which converge at the large classification yard at one end. One of the running tracks skirts one side of the property and extends to a connection with the smaller classification yard at the other end. This track, which is about 16 miles long, serves the depot (permanent storage) area in which the storage structures consist of groups of reinforced concrete "igloos." Here, as noted before, the munitions are transferred between railroad cars and the



A Platform Track and Partially Completed Buildings in One of the Storage Areas

igloos in trucks, instead of directly as in the other storage areas, and for this purpose a series of sidings with loading platforms are provided along the running track.

Of the approximately 119 miles of permanent tracks that were built as part of this project, 22 miles are in the manufacturing areas, 38 miles are in the storage areas of the plant, 28 miles are service tracks, 18 miles are connecting and classification-yard tracks and 12.55 miles are in the permanent storage depot.

Need Was Urgent

Work on this project was undertaken in the fall of 1940. Owing to the serious nature of the emergency confronting the country, with its attendant necessity of rushing the construction of defense plants with all possible speed, actual work was undertaken even before more than a bare start had been made on the development of the necessary plans. As a matter of fact, the contracts for the design and the construction of the plant were awarded simultaneously, with the thought that construction could proceed with the help of plans issued as rapidly as they could be drawn. Contracts for the design of the plant and of the depot were awarded to separate firms.

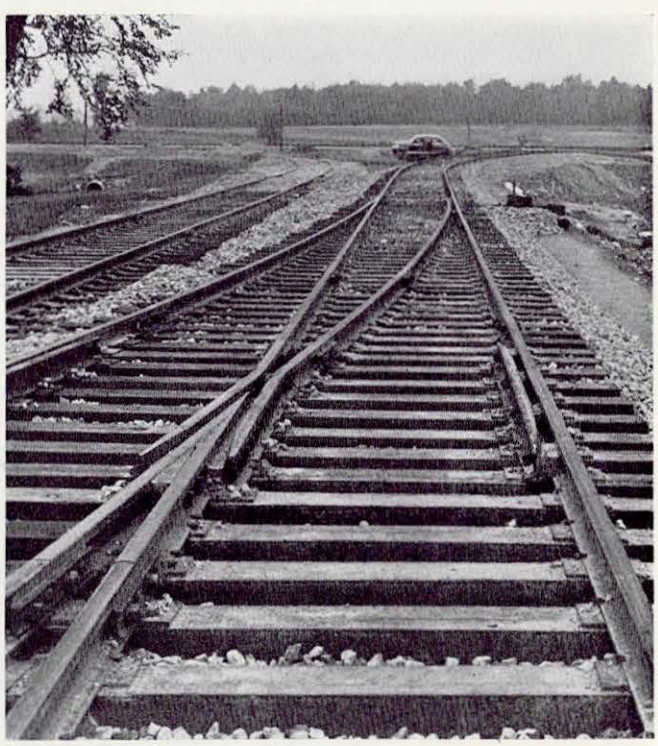
At the time that construction work got under way, the only information regarding the project that was readily available consisted of a general layout plate showing relative group positions, a contour map of the area published by the U. S. Geological Survey, county maps, and data gathered in reconnaissance trips on foot or horseback into the area, which was largely rolling farm land.

From the beginning it was apparent that, because of the quantities of materials and men that would be needed, and in view of the lack of suitable roads, one of the first requisites was the construction of the railroad network. In other words, it was necessary and economical to build the railroad trackage as quickly as possible to save the cost of the temporary trucking roads that would otherwise be needed to give access to the area for men and materials. As a preliminary step to this end, an aerial mosaic map was made of the entire area to serve as an overall control map. With this map serving as the basis for the general location of the railroads, it was possible to proceed with the surveys and the construction work.

Specifications

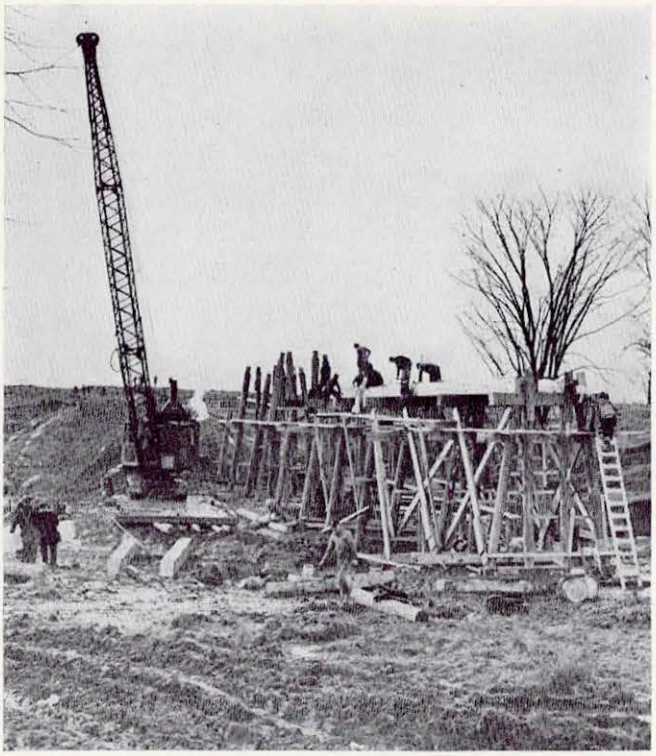
Among the requirements set up by the War Department, it was specified that 12 deg. was the maximum allowable curvature and that the maximum permissible grade in the storage and manufacturing areas was to be one per cent, except that throughout the length of each load line (about 4,000 ft.) the trackage must be level. It was stipulated further that the platform tracks must be level for a distance of 50 ft. in both directions from each storage building for explosives, the use of derails for keeping cars from rolling being prohibited. The one-per cent maximum was later relaxed somewhat to permit a grade of 1.75 per cent on one of the connecting lines and of 2.0 per cent on another, the object being to keep excavation quantities to a minimum. Even with these grades, cuts and fills as much as 20 ft. in depth were required.

Relatively high standards of track construction were established for this project. For the most part, 100-lb. relayer rail was used, although there is some 90-lb. and 85-lb. rail. The construction includes new angle-bars and bolts; creosoted pre-bored ties fully tie-plated and placed 20 to the 33-ft. panel; and slag ballast placed to an average depth of 10 in. below the bottoms of the ties. Side slopes for both cuts and fills were established at 1½:1.



All Permanent Tracks, as Shown in this View of a Typical Section, Were Built to a High Standard of Construction

The general topography of the area covered by the plant and depot is of a rolling nature, and it is cut by several blind stream channels. The nature of the subsoil is variable, ranging from solid rock, outcropping on the surface at the easterly end, to deep quicksand deposits which were found in the central and northerly parts of the area. Because of these conditions, it was apparent that the construction of the railroad trackage would not be an easy task, particularly in view of the fact that winter weather was at hand.



Construction View of One of the Six Pile Trestles that Were Built

Acquisition of Materials

It was anticipated that difficulty might be experienced in obtaining the necessary materials to insure that construction could go forward at the desired rate of speed. For this reason immediate steps were taken to obtain an adequate supply of materials. Approximately 100 track miles of 100-lb. relayer rail was purchased from a railroad, which was to be supplied as rapidly as it could be released from the tracks of that company. Also, orders for ties, fastenings, and switch material were placed with all available sources. Moreover, the contractor undertook to acquire a large amount of additional construction equipment, including many grading units, drilling equipment, trucks and portable lighting outfits, the latter being needed to permit work to be carried on at night.

Railroad construction of the magnitude involved in this project had not been carried out in this part of the country since World War I, and the recruiting of the necessary common labor and supervisory personnel was a problem which required several months to solve. For supervising the work, engineers and foremen, some on leave of absence, were obtained largely from the local railroads.

An adequate supply of labor was available but was largely inexperienced in railroad construction, and required training.

As rapidly as the railroad lines could be located and the necessary stakes set, the grading crews were put to work, with proper regard being given to the necessity of constructing first those connecting lines and running tracks that could be used for transporting men, materials and equipment into the area. Logically, therefore, the first step was the construction of the double-track connection between the local railroads at one end of the area, and of the classification yard there, which it was desired to use for the storage of material cars. As construction materials were received, they were unloaded and stored in the vicinity of the classification yard.

Construction Organization

The railroad construction crews were divided into three general groups—grading, material distribution, and track laying—each of which was under the supervision of a general superintendent. Obviously, a primary essential was to secure a high degree of co-ordination of the different operations, which was achieved through the agency of daily staff meetings of the supervisory officers.

Because the railroad trackage consisted of a network of lines, and also because of the urgent need for speed, it was not possible to build the tracks by progressing continuously along given lines, it being necessary rather to deliver the materials into the interior, constructing the lines in sections, and connecting them afterward. This necessitated that work be carried forward simultaneously at a number of widely-separated points. For example, there were a number of track-laying gangs, which were under the supervision of three general foremen, each of whom was responsible for one or more gangs. Throughout the course of the work, the grading operations were carried on night and day by three shifts, while the distribution of materials and the laying of the track were, at different times, carried forward by one or two shifts.

The amount of grading involved on this project was considerable, running well in excess of 2,000,000 cu. yd. for cut excavation alone. Also, in the easterly portion of the area, where a manufacturing line and a storage area are located, considerable sandstone was encountered, of which approximately 1,500,000 cu. yd. was excavated.

In the blasting operations involved in getting this rock out about 500,000 lb. of dynamite was used. Most of the rock obtained in this work was employed in the building of railroad and highway fills.

Grading Work Mechanized

The grading operations were highly mechanized, involving the extensive use of power shovels, carry-alls and trucks for excavating and hauling the material, and of bull-dozers and blade graders for spreading and shaping it in the fills. It was the intention to employ sheepsfoot rollers for compacting the embankment material in layers, but much of the time the material handled was so wet that this was not practicable. There were times during the course of the project when, due to weather conditions, the work areas became impassable for grading equipment; however, sufficient equipment was available to permit the grading work to be kept well ahead of the track-laying gangs, and no interruptions of the work due to bad weather actually occurred.

Much of the grading work was carried out in heavily wooded country, where it was desirable that as many

trees as possible be left in place to screen the various facilities. This consideration necessitated that excess cut excavation from such areas be hauled considerable distances for wasting in open fields rather than in the woods.

Because of the necessity of getting the railroad lines into operation as quickly as possible, many of the cuts and fills were not, at first, constructed to their final sections, the intention being to widen them at a later date as conditions permitted. As some of the fills were as much as 20 ft. high, and, since they were placed in operation as quickly as the tracks could be laid and ballasted, it was natural that a certain amount of settlement should occur, necessitating considerable reworking of the track to keep it in line and surface.

Excessive Water a Problem

The presence of excessive surface and sub-surface water in some locations presented a serious problem. An effort had been made to locate the trackage as far as practicable in locations where stable subgrades were available or where natural drainage was present, but this was not always possible. The adverse conditions encountered included swampy areas, pockets of deep unstable material resembling quicksand, and wet cuts. The latter condition necessitated the installation of extensive subdrainage systems in some of the cuts, involving longitudinal mains and branch laterals consisting of vitrified drain tile or perforated corrugated pipe laid in trenches back-filled with crushed slag. In some of the swampy areas a stable condition of the roadbed was achieved by means of surface drainage.

The deposits of quicksand presented a particular problem. At each of two locations where this difficulty was encountered, stabilization was achieved by constructing an intercepting ditch parallel to the track, 36 in. wide and about 10 ft. deep, in the bottom of which was installed an 18-in. vitrified tile drain pipe. The trench was then back-filled with crushed slag. In several instances it was necessary to construct what amounted to submerged pile trestles to carry the tracks across the quicksand deposits.

Owing to the fact that much of the fill material contained moisture in frozen form when placed, it was necessary to make provision for allowing the escape of this moisture during warmer weather. For this reason French drains, back-filled with crushed slag, were constructed in the completed fills at regular intervals. About six timber-pile trestles, as well as numerous culverts, were installed.

Most of the culverts are of reinforced concrete although some are of corrugated pipe.

Material Distribution

Because of the wet conditions underfoot that prevailed during much of the construction period, and the lack of access roads, the distribution of track materials was carried out under difficulties. Wherever possible, trucks were employed for distributing ties and track fastenings, but when conditions became such that trucks could no longer negotiate open fields, resort was had to "mudboats" drawn by teams or tractors. Rails were loaded 10 or 12 at a time on semi-trailers and carried forward as far as possible, whereupon they were unloaded and dragged the remainder of the distance with horses or tractors.

Because of the conditions under which the track work was carried out, it was not possible, of course, to organize the gangs on a highly-mechanized mass-production basis, although mechanized equipment, such as power track wrenches, track shifters and jacks, rail grinders, rail drills, and motor cars, were employed wherever possible. After the track had been laid, many of the joints were built up by welding, using for this purpose two arc-welding outfits.

Ballasting

Ballast was dumped in the usual manner from bottom-dump hopper cars, after which the track was given a first raise with a power jack, a second raise with track jacks and then fork tamped. Since the newly-laid track was usually put into service immediately for transporting construction materials, it required considerable maintenance during the construction period. For this purpose construction-maintenance crews were organized, each of which was assigned to a given territory in much the same manner as a regular section gang.

Materials for turnouts, including the ties, fastenings, frogs and switches, were assembled at a central yard, and when a turnout was to be installed, all the materials necessary were loaded on a flat car for shipment to the point of installation. Incidentally, 152 No. 8 and 73 No. 10 turnouts were installed.

Among the construction materials that were hauled at least partly by railroad was the concrete that was required in building construction. For batching the concrete, three central plants were established, from which it was shipped in transit mixers mounted either on highway trucks or on railroad cars, depending on which offered the best available means of access to the point of use.

For hauling concrete by railroad, three transit mixers were mounted on each flat car, the cars being drawn by steam or Diesel-electric locomotives.

In some cases temporary service tracks were built to the batching plants, as well as to an asphalt saving plant, and a temporary railroad station that was erected for handling commuter trains for workmen from and to nearby cities. Also, in some instances workmen were transported into the various work areas in box cars fitted with seats, and for the loading of these cars a temporary spur track was provided. About four miles of these temporary tracks were built.

In one instance the construction of buildings in a storage area was undertaken before the trackage had been extended sufficiently to permit it to be used for transporting materials into that area. Here a temporary narrow-gage railroad was built, the materials from which were later used in the construction of permanent standard-gage tracks in the same area. Construction materials, including concrete, destined for this area were hauled as far as possible by truck and then transferred to the narrow-gage equipment.

Centralized Traffic Control

As mentioned previously the more important interconnecting or running tracks at the plant are equipped with a centralized traffic control system. By means of this system traffic is controlled on a total of about 30 miles of tracks. Elsewhere in the plant and depot, traffic is controlled by telephone, visual observation, and regular train schedules. On its completion, the railroad was turned over to the operating company which has organized a local transportation department for operating it.

The construction of this entire project was carried out under the general supervision of the Constructing Quartermaster, United States Army.

Railway Purchases Expanded To Meet War Needs

$1,651,672,000 of materials, fuel and equipment in 1941— $138,149,000 of supplies and equipment in January, 1942

IN this review the *Railway Age* publishes its final summaries of aggregate railway buying in 1941 and its first totals of railway purchasing for this year. The final figures for 1941, while requiring slight revisions in previous estimates,* are more complete and accurate and are presented here in greater detail. The huge wartime needs of the railroads for materials and supplies and the active preparations made by carriers in all parts of the country to obtain them in the face of growing restrictions on the supply of critical materials are revealed vividly by the totals which are now available.

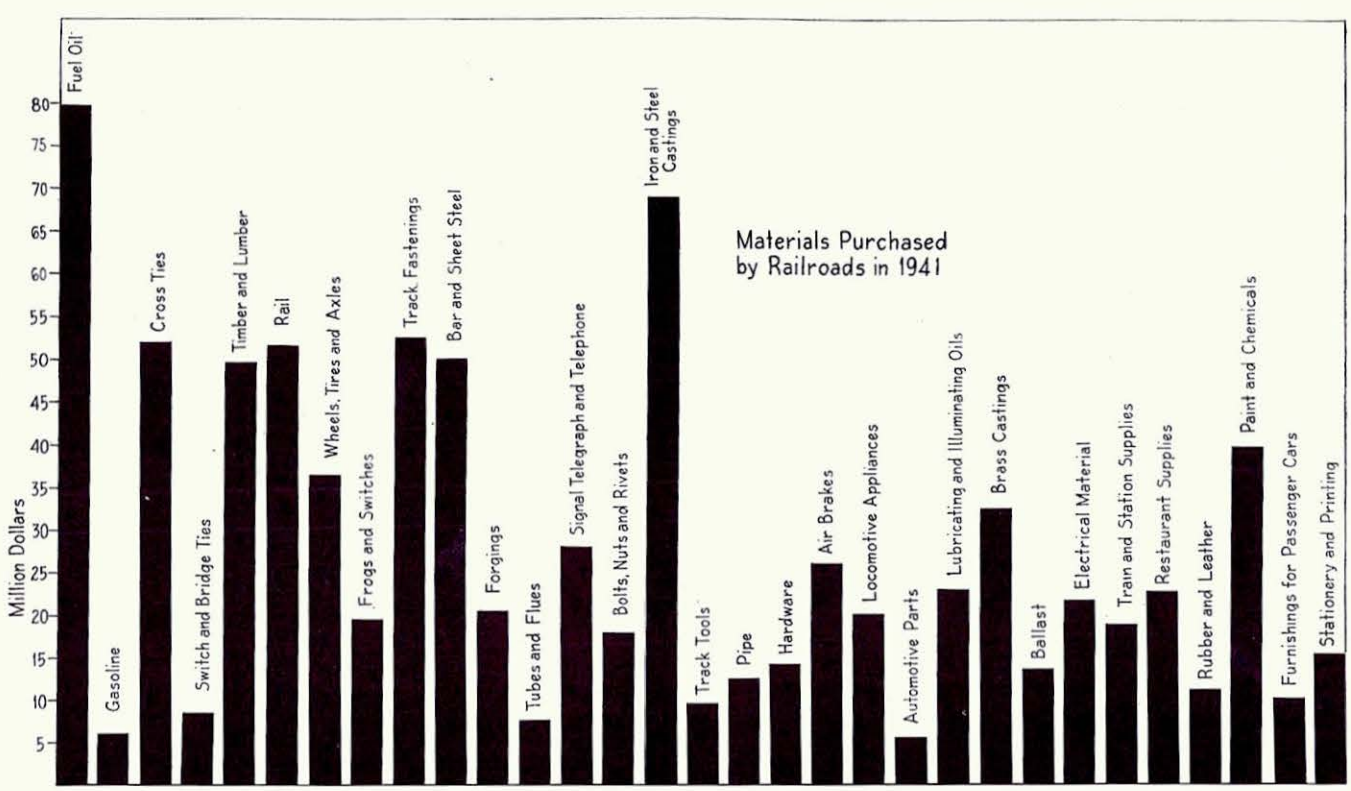
Buying for rail transportation in the United States amounted to approximately $1,651,672,000 in 1941 and totaled approximately $138,149,000 in the first month of this year, according to calculations which have just been completed. The totals for 1941, as compiled by the *Railway Age*, include $1,163,028,000 of materials, supplies and fuel, exclusive of equipment, received by the Class I lines; $44,743,000 of materials and fuel, exclusive of equipment, received by short lines and switching and terminal companies not controlled by Class I lines; $12,531,000 of materials, exclusive of equipment, received by the Pullman Company and $16,679,675 of materials, exclusive of equipment, received by 26 private car line companies from commercial firms for their rail line operations. It also includes $414,689,000 of new locomotives and cars ordered during the year from equipment builders, including $41,539,000 of equipment ordered by industries and $8,431,940 of equipment ordered by the U. S. Army and Navy for use in this country.

The figures exclude materials and equipment purchased by contractors of railway construction projects and also expenditures made by the railroads for heat, light, electric energy, land, rent and miscellaneous serv-

Materials Purchased in 1941

	Fuel (000)	Rail (000)	Cross Ties (000)	Other Material (000)	Total (000)	Total Less Fuel (000)
January	$27,261	$3,464	$3,472	$45,457	$79,654	$52,393
February	27,901	5,297	3,514	43,467	80,179	52,278
March	31,121	5,168	4,087	54,070	94,446	63,325
April	19,203	4,857	4,365	55,444	83,869	64,666
May	25,550	6,196	4,369	59,492	95,607	70,057
June	27,338	4,868	4,071	59,682	95,959	68,621
July	29,700	4,697	4,192	61,117	99,706	70,006
August	30,535	3,879	4,345	64,371	103,130	72,595
September	31,604	5,511	4,396	65,714	107,225	75,621
October	34,343	2,965	4,398	70,250	111,956	77,613
November	31,062	3,189	4,116	62,058	100,425	69,363
December	34,229	2,219	4,715	69,710	110,873	76,644
	$349,847	$52,310	$50,040	$710,832	$1,163,029	$813,182

* *Railway Age* of January 3, 1942.



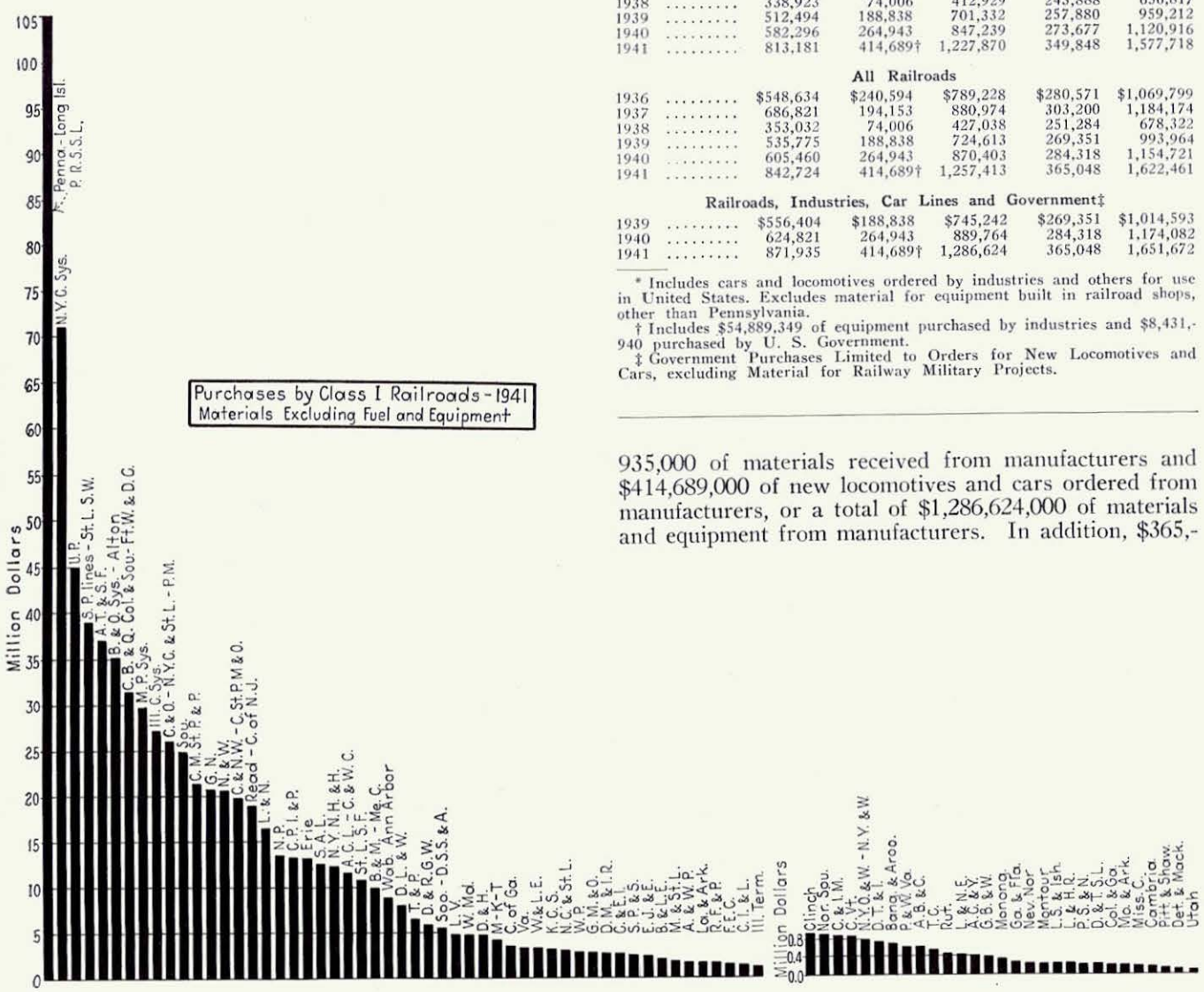
Expenditures Made by Railroads in 1941 for Selected Classes of Materials

ices. They also exclude purchases made in this country by railroads in Canada, Mexico and territories of the United States.

The totals for 1941 are based on extensively classified statements of purchases reported to the *Railway Age* by railroads operating over 97 per cent of the Class I mileage, together with special reports to this publication by approximately 200 short lines and terminal companies and this publication's revised records of orders placed by the railroads and industries for new locomotives and cars. Materials represent the delivered cost of materials received by the railroads in the calendar year from commercial firms while the purchases of equipment represent the orders for cars and locomotives placed with builders and are valued on the basis of the average price of each type of equipment ordered. Materials and equipment for locomotives and cars to be built in railroad shops are included in the materials reported by the railroads, except where otherwise noted.

January Purchases—Materials and Supplies

	Fuel (000)	Rail (000)	Crossties (000)	Other Material (000)	Total (000)	Total less Fuel (000)
1929	$31,275	$14,400	$9,819	$57,006	$112,500	$81,225
1930	31,235	9,215	10,375	61,675	112,500	81,265
1931	23,280	5,004	7,953	34,763	71,000	47,720
1932	17,500	1,652	2,400	19,948	41,500	24,000
1933	16,083	420	1,945	16,555	35,003	18,920
1934	17,320	1,542	2,063	23,873	44,798	27,478
1935	20,800	965	2,080	21,605	45,450	24,650
1936	21,859	1,107	3,027	29,656	55,649	33,790
1937	26,054	3,128	3,923	46,862	79,967	53,913
1938	22,198	1,830	3,867	26,225	54,120	31,922
1939	23,377	483	2,445	27,374	53,679	30,302
1940	24,978	3,529	4,128	45,593	78,228	53,250
1941	27,261	3,464	3,472	45,457	79,654	52,393
1942	34,767	2,284	5,425	67,500	109,976	75,209



Purchases, Exclusive of Fuel and Equipment, made by Railroads in 1941, Arranged in the Order of Size, Grouping Railroads into Systems

$1,286,624,000 from Manufacturers

As finally determined, the purchases made last year for rail transportation in this country include $871,935,000 of materials received from manufacturers and $414,689,000 of new locomotives and cars ordered from manufacturers, or a total of $1,286,624,000 of materials and equipment from manufacturers. In addition, $365,-

Annual Purchases—Supplies and Equipment—12 Months

	Materials received from mfrs. (000)	Equipment ordered from mfrs.* (000)	Total from mfrs. (000)	Fuel (000)	Total including fuel (000)
Class I Railroads					
1929	$965,143	$397,121	$1,362,264	$364,392	$1,726,656
1930	732,000	146,471	878,471	306,500	1,184,971
1931	450,500	28,873	479,373	244,500	723,873
1932	266,750	2,623	269,373	178,250	447,623
1933	278,600	5,857	284,457	179,150	463,607
1934	382,930	66,850	449,780	217,294	667,074
1935	360,404	35,696	396,100	232,723	628,823
1936	530,907	240,594	771,501	271,397	1,042,898
1937	665,395	194,153	859,548	293,540	1,153,088
1938	338,923	74,006	412,929	243,888	656,817
1939	512,494	188,838	701,332	257,880	959,212
1940	582,296	264,943	847,239	273,677	1,120,916
1941	813,181	414,689†	1,227,870	349,848	1,577,718
All Railroads					
1936	$548,634	$240,594	$789,228	$280,571	$1,069,799
1937	686,821	194,153	880,974	303,200	1,184,174
1938	353,032	74,006	427,038	251,284	678,322
1939	535,775	188,838	724,613	269,351	993,964
1940	605,460	264,943	870,403	284,318	1,154,721
1941	842,724	414,689†	1,257,413	365,048	1,622,461
Railroads, Industries, Car Lines and Government‡					
1939	$556,404	$188,838	$745,242	$269,351	$1,014,593
1940	624,821	264,943	889,764	284,318	1,174,082
1941	871,935	414,689†	1,286,624	365,048	1,651,672

* Includes cars and locomotives ordered by industries and others for use in United States. Excludes material for equipment built in railroad shops, other than Pennsylvania.

† Includes $54,889,349 of equipment purchased by industries and $8,431,940 purchased by U. S. Government.

‡ Government Purchases Limited to Orders for New Locomotives and Cars, excluding Material for Railway Military Projects.

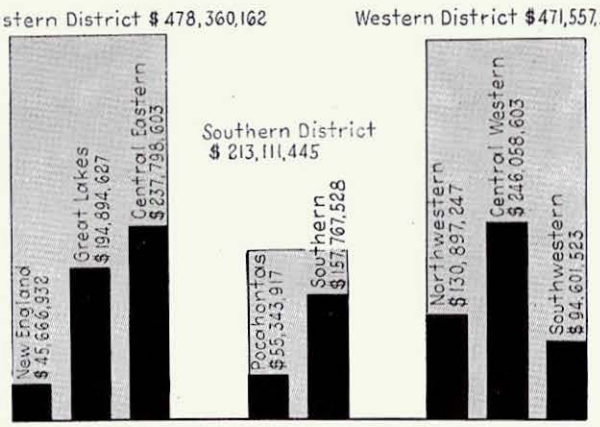
048,000 was spent by the railroads for fuel. The materials received from manufacturers last year by all the railroads and reporting car lines were larger by $247,114,000, or 39 per cent, than the corresponding purchases by all railroads in 1940 and the value of new locomotives and cars ordered from manufacturers for domestic transportation in 1941 was larger by $149,746,000, or 56.5 per cent, than the corresponding contracts in 1940, as revised to include the latest figures for 1940, while the combined purchases of materials and equipment, exclusive of fuel, made by the same carriers and industries from manufacturers last year were larger by $396,860,000, or 47 per cent, than the corresponding authorizations in 1940. Including fuel, the combined purchases made by all the railroads last year were larger by $477,590,000, or 41 per cent, than their corresponding buying in 1940. The combined purchases were approximately 62 per cent larger than in 1939, approximately 142 per cent larger than in 1938, approximately 40 per cent larger than in 1937 and were about equal to the corresponding purchases in 1929, without making adjustments for differences in material prices.

The all-railroad (Class I, short lines and switching roads) total for 1941 included approximately $273,066,000 of bituminous coal, as compared with $215,282,000 in 1940; approximately $78,929,000 of fuel oil, as compared with 57,864,000 in 1940; and $5,711,000 of gasoline, as compared with $4,570,000 in 1940.

January Purchases of Fuel and Material

(Excludes New Equipment)

	January 1941	January 1942	Increase Per Cent	December 1941	Increase Per Cent
A. C. & Y.	$24,017	$42,293	74	$46,420	−10
Alton	300,696	479,161	59	384,011	25
Alton & Southern	22,513	81,044	260	27,392	193
Ann Arbor	84,672	94,157	11	107,282	−12
A. T. & S. F.	3,928,868	4,632,649	18	5,279,221	−12
A. B. & C.	62,683	80,932	28	77,654	3
Atl. Coast Lines	1,105,367	2,073,146	88	1,695,545	−47
B. & O.	3,409,192	3,999,725	18	3,914,257	2
Bangor & Aroos.	62,935	79,121	26	62,885	26
Belt of Chgo.	98,329	88,762	−10	77,198	+15
Bingham & Gar.	10,207	10,979	6	29,878	−63
Boston & Maine	760,302	1,043,105	37	1,072,826	−3
Burl.-Rock Isl.	5,087	9,152	80	11,686	−22
Cambria & Ind.	8,801	12,526	43	10,601	8
Cent. of Ga.	379,286	408,351	8	438,800	−6
Central Vt.	119,795	140,631	18	178,971	−21
Char. & West Coast	55,410	98,998	78	135,880	−27
C. & O.	2,109,620	1,936,150	−8	2,033,613	−4
C. & E. I.	199,196	335,321	68	272,435	23
C. & I. M.	220,355	128,522	−42	131,407	−2
C. B. & Q.	1,216,536	2,239,229	82	3,628,286	−38
C. R. I. & P.	1,182,475	1,861,716	57	1,581,206	17
Col. & Green	14,176	27,416	93	25,665	10
D. & H.	512,644	795,437	55	834,892	63
Det. & Mack.	19,595	10,864	−45	10,165	6
D. & T. S. L.	31,023	27,541	−11	40,830	−32
D. T. & I.	69,013	107,551	56	102,180	5
D. M. & I. R.	145,684	220,742	−11	271,092	1
D. S. S. & A.	59,905	76,613	28	41,756	84
E. J. & E.	392,612	267,226	−32	324,239	−18
Erie	1,301,629	1,934,839	48	2,105,635	−8
F. E. C.	235,341	263,972	11	310,162	−15
Ft. W. & D. C.	101,113	195,646	94	147,152	32
Great Northern	1,793,323	2,773,105	55	2,344,355	18
Ill. Cent.	2,672,242	3,496,800	30	3,141,436	11
Ill. Term.	72,218	111,404	54	137,513	−18
K. C. Term.	78,074	70,761	−10	89,908	−11
Lake Sup. & Ish.	16,135	10,168	−37	5,613	80
L. & H. R.	27,349	48,981	74	30,324	58
L. & N. E.	37,669	83,660	122	68,544	21
Lehigh Valley	786,018	940,910	20	1,089,805	−13
La. & Ark.	140,684	158,646	13	279,817	−43
L. & N.	2,553,955	2,101,121	−18	1,793,892	17
Miss. Cent.	17,287	15,472	−10	18,193	−14
M.-K.-T.	322,556	748,657	130	692,708	8
Monongahela	54,857	46,665	−14	26,356	
Montour	19,383	34,622	80	25,926	37
N. C. & St. L.	367,277	398,839	8	420,314	−5
Nev. Northern	23,847	24,182	1	21,852	10
N. Y. C. & St. L.	708,547	932,013	32	1,033,355	−10
N. Y., N. H. & H.	1,126,838	1,781,155	58	1,757,424	1
N. Y. O. & W.	102,258	126,479	25	162,164	−22
Nor. Pac.	1,210,448	1,932,179	60	2,141,171	−10
N. W. Pac.	38,577	39,849	3	43,754	−9
Pere Marq.	632,190	626,489	−1	769,410	−18
Pitt. & Shaw	10,165	11,788	16	23,742	−50
Pitt. Shaw. & Nor.	18,870	29,769	47	28,896	+4
Rich., Fred. & Pot	183,578	310,625	69	276,249	12
Rutland	66,287	40,870	−38	115,534	−65
St. L.-S. F.	963,390	1,222,244	27	1,450,570	−15
Sou. Pac.	3,132,064	4,962,594	58	4,097,959	21
Tenn. Cent.	42,497	76,255	79	48,332	58
T. & St. L.	155,202	201,905	30	207,556	−3
T. & N. O.	691,806	882,114	28	1,251,449	−29
Tex. & Pac.	540,838	956,107	77	816,607	17
Union Pac.	3,238,787	6,142,694	89	7,066,904	−13
Utah	10,328	18,167	27	16,977	−22
Virginian	203,653	453,110	122	566,796	−20



Expenditures in the Aggregate by Railroads In Each Operating Region—Does Not Indicate Expenditures Made in Each Region

110 Million Dollars of Forest Products

Purchases of forest products by all railroads in 1941 totaled approximately $110,167,000, as compared with $86,827,000 in 1940. This total included $53,979,000 of cross ties, as compared with $51,257,000 in 1940; $7,409,000 of switch and bridge ties, as compared with $5,070,000 in 1940 and $44,973,000 of timber and lumber, as compared with $27,996,000 in the previous year.

Since the inauguration of preparations in this country for national defense, iron and steel, copper and other metals have been increasingly required for military purposes and the railroads have correspondingly faced increasing difficulty in obtaining their requirements of these materials, which can now be obtained only under priority rulings and as allocated by government agencies. This is particularly true in the case of steel plates and rail. The quantities of iron and steel and other metals received by the railroads in 1941 are, therefore, particularly significant of the imposing volume of this material required for railway operation and maintenance. Purchases of materials of iron and steel, exclusive of the iron and steel received for building new locomotives and cars in the plants of equipment builders, totaled $474,856,000 in 1941, as compared with $331,278,000 in 1940 and $288,953,000 in 1939. In this total was $52,959,000 of steel rails, as compared with $46,635,000 of rails received in 1940. The rail received last year included some second hand rail. Wheels, tires and axles received by all the railroads last year for maintenance, operation and for building equipment in railroad shops totaled $37,244,000, as compared with $28,449,000 in 1940. Switches, frogs and crossings for railway track totaled $19,484,000, as compared with $14,104,000 in the previous year, and $52,664,000 of materials, other than rail and switches, were received for track maintenance, as compared with $37,741,000 in the previous year.

Other products of iron and steel received by the Class I railroads and other operating companies last year included $50,586,000 of bar and sheet steel, as compared with $26,248,000 in 1940; approximately $20,299,000 of car and locomotive forgings, as compared with $17,-

217,000 in 1940; and $7,742,000 of boiler tubes and similar material, as compared with $5,149,000 in 1940. Purchases of signal and interlocking materials, together with telephone and telegraph materials, last year came to $22,217,000, as compared with $15,271,000 in 1940, while $44,390,000 of car and locomotive castings were received directly by the railroads, as compared with $44,021,000 in the previous year.

During 1941 the Class I railroads and short lines and terminal companies also received $9,287,000 of track tools, $12,856,000 of iron and steel pipe and $17,367,000 of small tools and hardware. Purchases of air brake materials totaled $25,134,000 and deliveries of appliances and specialties for cars and locomotives, purchased directly by the railroads in 1941 amounted to $20,080,000.

Last year's purchases also included approximately $22,956,000 of lubricating and illuminating oils, greases, etc.; and $33,569,000 of materials of copper and brass and other nonferrous metals, as compared with $21,589,000 of these materials in the previous year. Deliveries of electrical materials, not otherwise classified,

Purchases by Car Companies for Rail Line Operations 1941

Company	Material and supplies	Cars ordered from other companies	Total
Armour Car Lines	$1,011,068	$.....	$1,011,068
Brown Company	136	.....	136
Burlington Refrigerator Express	521,993	.....	521,993
Champlin Refining	8,197	.....	8,197
Cities Service Oil (Del.)	39,432	54,276	93,708
Crystal Car Line	5,866	.....	5,866
Cudahy Packing	416,264	.....	416,264
Ethyl Gasoline	876	308,720	309,596
Fruit Growers Express	5,212,663	.....	5,212,663
Hanlon-Buchanan, Inc.	9,818	.....	9,818
Hooker Electrochemical	.....	.....	.....
Monsanto Chemical Co.	1,410	53,309	54,719
New River & Pocahontas Coal	181,926	.....	181,926
North American Car	712,664	.....	712,664
Pacific Fruit Express	6,849,528	11,353,508	18,203,036
Pullman	12,531,911	6,760,010	19,291,921
Railway Express Agency	17,924	.....	17,924
Rainey-Wood Coke Co.	15,829	.....	15,829
Root Petroleum	12,500	.....	12,500
St. Louis Refrigerator	297,710	.....	297,710
Shell Oil Company	69,258	.....	69,258
Socony Vacuum Co. (Mo.)	9,056	.....	9,056
Western Fruit Express	1,284,557	.....	1,284,557

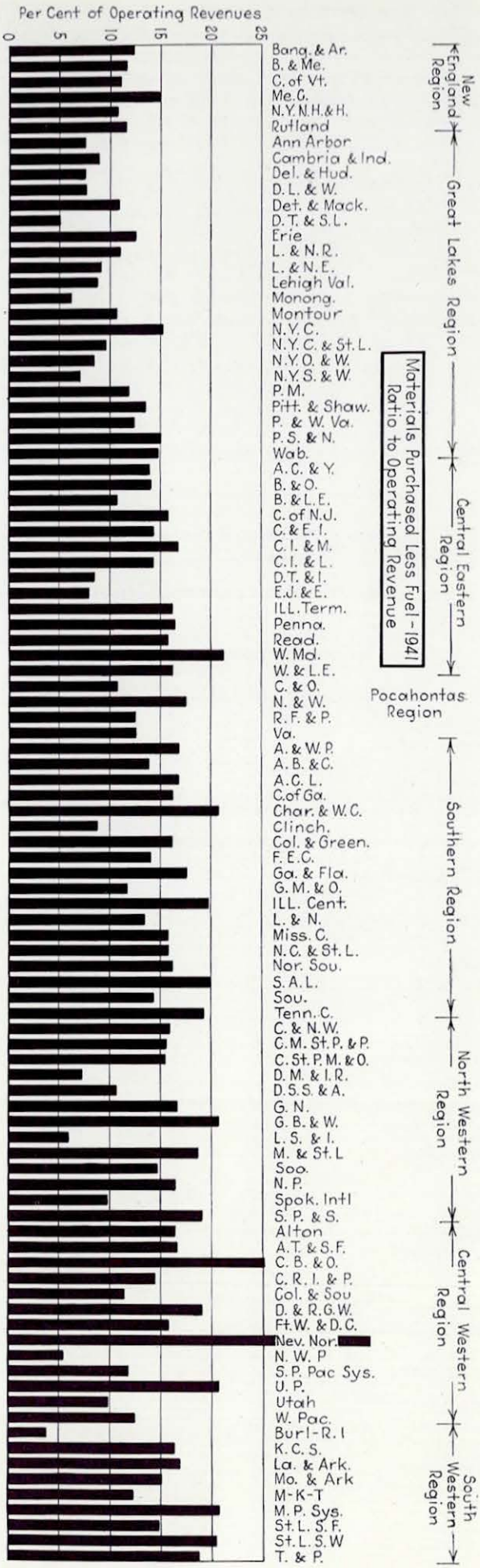
totaled $21,389,000 in 1941, as compared with $15,245,000 in 1940, while expenditures for stationery and printing totaled $18,965,000 and those for dining cars and lunch counters came to $22,946,000. In addition, the railroads received $39,833,000 of chemicals, drugs and paint supplies last year; $11,570,000 of products of rubber and leather and $15,721,000 of supplies for train operation and for stations.

Based on special information furnished by 30 railroads, approximately $325,747,000, or 28 per cent, of the purchases of fuel and materials made by the railroads in 1941 were for maintenance of way and structures, $312,625,000, or 27 per cent, were for the maintenance of equipment and $415,579,000, or 35 per cent, of the materials and supplies (chiefly fuel) were for operating uses, the remainder being materials used in common by all departments.

3.7 Billion Feet of Lumber

The railroads last year purchased directly from producers and distributors approximately 115,525,000 tons of bituminous coal, 1,564,000 tons of anthracite coal, 81,160,000 bbl. of fuel oil at 42 gal. per bbl. and 58,200,000 gal. of gasoline. The purchases also included approximately 49,916,000 crossties, 203,427,000 bd. ft. of switch and bridge ties and 1,065,790,000 bd. ft. of timber and lumber, or a total of 1,269,217,000 bd. ft. of timber and lumber, excluding ties and miscellaneous

Relation of Railway Purchases in 1941 to Annual Operating Revenues



timber not purchased on a board foot basis. The delivered rail amounted to approximately 1,257,000 gross tons. The purchases made directly by the railroads last year also included approximately 1,500,000 bbl. of cement and 16,900,000 cu. yd. of ballast.

Western Roads Increase Outlays

Materials and fuel, exclusive of equipment, received by Class I trunk lines of the Eastern district, including the New England lines, totaled $478,360,162 last year, which was a gain of 40 per cent over the corresponding materials received in 1940 and represented 41 per cent of the fuel and materials received by all railroads, while the purchases of the trunk lines in the Western district amounted to $471,557,373, which reflected a gain of 39 per cent over the corresponding purchases in 1940 and was 40.5 per cent of the all-railroad total for 1941. Compared to this, railroads in the Southern district received $213,111,445 last year, or 18.5 per cent of the materials received by all the railroads last year. The purchases of materials and fuel by the railroads in the Western district last year were equivalent to 23.5 per cent of their gross operating revenues, while the purchases by the railroads in the Southern district were equal to 21.0 per cent and the purchases of the railroads in the Eastern district were equivalent to 20.3 per cent of their gross operating revenues. In 1940 the corresponding ratios were 21.2 per cent in the Western district, 21.4 in the Southern district and 18.3 per cent in the Eastern district.

Of the total expenditures made by the Class I trunk lines last year for materials and supplies, exclusive of equipment, $45,666,932 were made by railroads in the New England region, $194,894,627 by railroads in the Great Lakes region, $237,798,603 by roads in the Central Eastern region, $55,343,917 by roads in the Pocahontas region, $157,767,528 by roads in the Southern region, $130,897,247 by roads in the Northwestern region, $246,058,603 by roads in the Central Western region and $94,601,523 by roads in the Southwestern region. These figures do not include the purchases by short lines, switching and terminal companies whose purchasing is performed independently of the Class I roads. Only nine trunk lines reported smaller volumes of purchases of materials and supplies last year than in the preceding year, while other roads reported increases ranging up to 100 per cent. The increases in the materials, exclusive of fuel and equipment, amounted to $7,615,839, or 25.8 per cent on the Atchison, Topeka and Santa Fe; $8,612,131, or 37.0 per cent, on the Baltimore and Ohio; $4,805,306, or 40 per cent, on the Chicago and North Western; $12,373,226, or 72 per cent, on the Chicago, Burlington and Quincy; $3,536,499, or 36 per cent on the Erie; $4,594,729, or 28 per cent, on the Great Northern; $9,853,173, or 55 per cent, on the Illinois Central; $2,219,581, or 106 per cent, on the Missouri-Kansas-Texas; $6,208,430, or 26 per cent, on the Missouri Pacific lines; $17,458,166, or 32 per cent, on the New York Central; $4,694,304, or 51 per cent, on the Northern Pacific; $50,307,981, or 91 per cent, on the Pennsylvania; $5,739,379, or 90 per cent, on the Reading; $3,634,665, or 39 per cent, on the Seaboard; $5,056,285, or 25 per cent, on the Southern Pacific and $19,721,531, or 76 per cent, on the Union Pacific.

While the railroads did not receive deliveries on all

Purchases by Class I Railroads — 1941
(Excludes Fuel and New Equipment)

	1941	Increase over 1940	Per cent increase	Per cent of oper. rev. 1941	Rail Received Gross Tons
Akron, Can. & Young.	$428,923	$141,250	49.2	13.7	801
Alton	3,519,589	966,191	36.3	17.3	4,599
Ann Arbor	350,918	43,094	14.1	7.4	20
A. T. & S. F.	37,133,478	7,615,839	25.8	16.5	40,882
A. B. & C.	634,619	49,866	8.6	13.6	1,005
A. C. L.	11,186,193	1,695,204	17.9	16.6	11,477
B. & O.	32,006,120	8,612,131	37.0	13.9	31,470
Bangor & Aroostook	709,300	−93,685	−11.5	12.5	1,648
Atla. & W. Point	1,730,814	666,579	62.8	16.5	2,494
Bessemer & Lake Erie	2,137,056	336,190	18.7	10.5	1,391
Boston & Albany	2,005,177	140,809	7.6	9.9	3,750*
Boston & Maine	7,150,210	2,228,317	45.2	12.0	10,709
Burl.-Rock Island	39,761	3,473	9.5	3.2	None
Cambria & Indiana	165,642	67,000	68.0	8.9	300
Central of Georgia	3,559,121	654,529	22.5	15.0	9,414
Central of New Jersey	6,762,690	1,658,362	32.3	15.6	5,285
Central Vermont	861,891	26,521	3.2	11.0	828
Charleston & W. Car.	688,312	182,499	36.0	20.1	519
C. & O.	15,785,463	−4,061,851	−20.5	10.4	34,939
C. & E. I.	2,626,007	568,471	27.6	14.1	6,039
C. & I. M.	892,440	80,532	9.9	16.5	1,848
C. & N. W.	16,857,514	4,805,306	40.0	15.4	17,316
C. B. & Q.	29,514,029	12,373,226	72.3	25.1	52,034
C. G. S.	2,687,370	243,375	10.0	25.0	4,234
C. I. & L.	1,513,746	329,384	27.7	14.0	2,650*
C. R. I. & P.	13,720,231	2,219,514	19.3	14.2	41,081
C. St. P. M. & O.	3,051,165	794,965	35.0	15.2	2,046
Clinchfield	924,180	66,226	7.8	8.3	1,054
Colo. & Sou.	942,600	329,785	53.6	11.9	1,023
Col. & Green	214,382	87,996	70.0	15.8	None
D. & H.	4,804,021	1,396,578	41.0	14.1	10,126
D. L. & W.	7,768,013	2,183,949	38.2	12.7	6,774
D. & R. G. W.	5,796,887	1,782,959	44.5	18.3	11,646
Det. & Mack.	91,588	1,146	1.0	10.8	198
D. & T. S. L.	219,474	82,026	60.0	5.0	
D. T. & I.	726,859	−54,009	−6.9	8.3	702
D. M. & I. R.	2,669,783	535,534	25.0	7.3	190
D. S. S. & A.	386,312	4,193	1.1	11.4	2,318
E. J. & E.	2,339,383	497,905	27.0	7.9	2,471
Erie	13,263,721	3,536,499	36.3	12.4	21,000*
F. E. C.	1,584,339	168,366	11.9	13.8	None
Ft. W. & D. C.	1,034,086	216,505	26.5	15.5	145
Ga. & Fla.	293,586			17.8	
Grand T. West.	6,619,154	2,957,032	80.0	21.8	2,407
Great Northern	20,968,710	4,594,729	27.9	16.7	23,016
Green Bay & Western	407,067	55,082	15.7	20.3	500
Gulf, Mo. & Ohio	2,710,234	96,799	3.7	11.4	5,854
Ill. Cent. Sys.	27,683,093	9,853,173	55.0	19.4	56,130
Ill. Term.	1,117,563	67,465	6.4	15.9	1,420
K. C. Southern	3,177,177	1,140,954	51.2	16.5	8,522
L. S. & I.	243,320	5,489	2.3	6.8	None
L. & H. R.	243,001	58,010	31.4	10.8	None
L. & N. E.	471,757	225,888	92.1	8.9	None
Lehigh Valley	4,874,356	828,798	20.4	8.6	1,833
La. & Ark.	1,760,706	70,924	4.2	16.8	
La. & Nash.	16,183,250	262,189	1.6	13.6	32,649
Me. Cent. & P. Term.	2,159,617	483,483	28.8	14.6	None
M. & St. L.	1,964,124	103,350	5.5	18.2	2,500*
M. St. P. & S. S. M.	5,174,166	1,404,303	37.2	14.8	9,780
Miss. Cent.	179,418	−52,460	−22.6	15.3	None
Mo. & Ark.	202,737	23,105	12.9	14.9	570
M.-K.-T.	4,303,373	2,219,581	106.1	12.3	2,500*
Mo. Pac. Lines	29,611,625	6,208,430	26.4	20.2	53,298
Monongahela	367,769	13,790	3.9	6.2	400
Montour	248,685	50,657	25.6	10.2	500
N. C. & St. L.	3,016,162	469,854	18.4	15.4	1,968
Nev. Northern	249,926	120,182	93.1	35.3	409
New York Central	71,663,355	17,478,166	32.2	15.0	84,000*
N. Y. C. & St. L.	5,177,225	−120,521	−2.3	8.6	7,447
N. Y., N. H. & H.	12,469,419	3,118,791	33.4	10.6	15,136
N. Y., Ont. & W.	506,940	70,263	16.1	8.2	1,400*
N. Y., Susq. & W.	271,846			6.8	912
Nor. Sou.	902,451	184,177	25.8	16.0	2,571
Norf. & West.	20,771,564	2,318,008	12.5	17.2	37,694
Northern Pacific	13,814,186	4,694,304	51.1	16.2	44,324
N. W. Pac.	182,981	−63,140	−25.7	5.2	1*
Pa. & L. I. & P. R. S. S.	105,695,377	50,307,981	91.0	16.3	113,501
Pere Marquette	4,949,910	29,364	0.6	12.7	4,691
Pitts. & Shawmut	146,192	−56,346	−27.8	13.6	142
Pitts. & W. Va.	638,462	−103,878	−14.0	12.1	1,891
Pitts. S. & Nor.	225,352	123,648	122.0	14.8	108
Reading	12,090,436	5,739,379	90.2	15.2	1,801
R. F. & P.	1,705,024	172,529	11.2	12.1	1,233
Rutland	485,779	207,070	74.5	12.9	523
St. L.-S. F.	10,691,901	4,561,114	74.5	14.6	14,147
St. L., S. W.	5,919,934	2,072,376	54.0	20.7	16,573
Seaboard Air Lines	12,820,675	3,634,665	39.6	19.8	17,877
Southern	24,927,106	5,494,997	28.2	14.0	42,316
Southern Pacific	25,130,359	5,056,285	25.2	11.5	65,500*
Spokane International	92,736	25,715	38.2	9.8	
Spok., Port. & Seattle	2,490,315	1,473,867	14.5	18.8	
Tenn. Cent.	534,227	55,197	11.5	18.2	1,023
T. & N. O.	7,101,842	2,285,597	47.5	11.8	
Tex. & Pac.	6,133,697	1,910,779	45.3	18.6	
Union Pacific	45,521,833	19,721,531	76.5	21.0	86,874
Utah	82,651	14,252	20.9	8.9	None
Virginian	3,415,384	−2,005,949	−37.0	12.3	13,750*
Wabash	8,359,208	403,939	5.1	14.5	14,756
West. Md.	4,856,048	1,479,592	43.8	21.3	
West. Pac.	2,971,749	1,279,812	75.8	12.4	3,713
Wheeling & L. E.	3,348,288	891,795	36.4	15.8	10,400*

* Estimated.

Classified Purchases, Exclusive of Equipment, by Railroads in 1941 — Partially Estimated

	New England Region	Great Lakes Region	Central Eastern Region	Pocahontas Region	Southern Region	North-western Region	Central Western Region	South-western Region	Class I Trunk Lines 1941	Other Roads 1941	All Roads 1941	All Roads 1940	All Roads 1939	All Roads 1937
FUEL														
Bituminous coal	$17,136,360	$60,987,176	$56,632,726	$13,199,440	$44,561,432	$30,734,628	$27,913,425	$7,680,964	$258,846,151	$14,220,445	$273,066,596	$215,282,153	$204,240,061	$233,550,850
Anthracite coal	96,957	1,885,788	1,944,516	1,461	12,413	34,732	15,966	3,209	3,995,042	60,318	4,055,360	3,569,671	4,949,046	3,980,174
Fuel oil	1,315,319	1,272,907	1,706,528	63,731	2,520,123	6,124,372	48,316,193	16,804,675	78,123,848	805,493	78,929,341	57,864,018	53,170,191	67,175,860
Gasoline	381,382	1,036,925	789,797	173,653	667,858	734,284	1,418,315	413,319	5,615,533	95,343	5,710,876	4,570,496	4,363,040	5,437,557
All other	57,201	391,676	260,292	276,410	233,540	626,875	1,395,780	25,811	3,267,585	18,608	3,286,193	3,031,806	2,628,867	3,055,127
Total fuel	18,987,219	65,574,472	61,333,859	13,714,695	47,995,366	38,254,891	79,059,679	24,927,978	349,848,159	15,200,207	365,048,366	284,318,144	269,351,205	303,199,568
FOREST PRODUCTS														
Cross ties	937,453	9,278,113	6,277,865	1,607,701	10,425,860	8,793,829	8,224,395	4,494,607	50,039,823	3,938,949	53,978,772	51,257,049	43,073,943	61,577,267
Switch and bridge ties	187,245	767,741	1,571,499	313,144	1,597,192	944,617	755,222	600,530	6,737,190	672,035	7,409,225	5,070,399	4,702,311	7,069,650
Timber and lumber	1,645,037	6,432,280	7,100,572	1,211,189	8,075,151	6,674,983	8,893,489	4,622,032	44,654,733	317,891	44,972,624	27,996,380	24,856,179	36,351,772
Other forest products	181,071	177,967	296,139	191,097	369,071	874,666	1,108,193	608,588	3,806,792	.....	3,806,792	2,502,918	2,344,082	3,782,820
Total forest products	2,950,806	16,656,101	15,246,075	3,323,131	20,467,274	17,288,095	18,981,299	10,325,757	105,238,538	4,928,875	110,167,413	86,826,746	74,976,515	108,781,509
RON AND STEEL PRODUCTS														
Steel rail (new & S. H.)	1,472,716	6,676,856	7,463,644	3,711,897	7,704,424	6,765,706	13,377,328	5,136,892	52,309,463	650,000	52,959,463	46,634,935	39,390,367	45,700,532
Wheels, axles and tires	1,029,160	7,191,221	7,142,482	1,240,804	5,451,380	3,843,854	7,947,237	2,950,818	36,796,956	447,173	37,244,129	28,448,914	26,225,046	31,202,594
Frogs, switches and crossings	714,867	3,312,422	4,377,758	855,823	2,379,626	1,486,221	3,249,098	1,348,345	17,724,160	1,759,582	19,483,742	14,104,241	10,505,833	14,015,660
Trk. fastenings, trk. bolts, spikes, etc.	1,634,085	8,582,997	11,571,292	2,355,044	6,701,277	7,266,050	9,749,956	2,871,454	50,732,155	1,931,921	52,664,076	37,741,521	36,505,344	37,224,705
Iron bridges, turntables and struc.	148,455	308,535	759,595	309,112	488,819	554,463	1,032,143	110,293	3,711,415	.....	3,711,415	3,208,551	3,078,551	4,227,359
Bar iron and steel, sheets, etc.	710,551	6,885,649	22,216,081	3,562,380	4,401,753	2,509,205	6,426,603	3,436,444	50,148,666	437,586	50,586,252	26,247,644	22,588,686	31,896,103
Forgings, etc. for locomotives	142,711	438,190	480,390	68,821	456,453	319,045	962,684	278,237	3,146,531	126,465	3,272,996	2,697,990	2,338,262	4,112,945
Car forgings, shapes, etc.	157,314	2,211,773	5,572,891	1,089,204	930,630	1,034,091	3,896,457	1,570,734	16,463,094	563,499	17,026,593	14,419,673	12,989,418	17,611,581
Flues, tubes and superheat	365,317	2,148,976	1,657,937	385,011	1,076,734	577,940	815,445	513,289	7,540,649	201,827	7,742,476	5,149,380	4,559,164	5,904,196
Interlocking and signal material	895,156	4,185,393	5,044,179	1,471,935	2,885,235	1,910,227	4,899,564	1,260,095	22,551,784	878,378	23,430,162	18,219,943	13,479,137	16,573,281
Telegraph and telephone material	148,862	395,237	1,345,882	207,159	438,270	678,254	891,567	205,777	4,311,008	314,404	4,625,412	3,997,698	1,792,724	2,681,781
Bolts, nuts, washers, etc.	432,765	3,700,269	4,081,948	498,363	1,768,317	1,269,335	3,275,611	1,771,979	16,798,587	261,907	17,060,494	9,528,716	9,649,404	12,153,770
Springs	98,914	646,945	989,117	559,500	772,660	669,392	519,002	1,227,186	5,482,716	175,389	5,658,105	3,949,836	3,389,650	3,954,634
Loco. and car castings, etc.	1,483,076	11,796,807	17,182,653	3,459,481	7,933,083	6,000,411	13,848,265	4,859,210	66,562,986	3,214,319	69,777,305	44,389,588	44,021,517	64,323,703
Track and roadway tools, etc.	491,578	1,169,556	1,163,120	460,627	1,613,427	1,176,074	1,975,880	909,677	8,959,939	327,187	9,287,126	9,754,510	5,799,123	6,867,111
Machinery and repair parts	112,345	563,968	956,800	175,311	820,817	466,533	977,522	1,090,969	5,164,265	126,697	5,290,962	4,356,677	2,897,271	5,367,478
Boilers and miscellaneous	572,165	2,946,260	1,628,140	1,118,406	1,658,279	1,396,321	2,352,753	1,015,964	12,688,288	167,516	12,855,804	8,804,360	7,600,334	10,039,758
Pipe, iron and steel and fittings	342,203	1,096,933	2,591,933	500,195	1,233,024	933,891	2,282,008	1,142,467	10,123,654	363,038	10,486,692	5,497,448	5,876,601	7,164,146
Hardware	170,559	1,381,327	1,452,301	199,448	585,808	959,702	1,015,529	994,030	6,758,704	122,223	6,880,927	4,301,190	4,158,416	5,015,093
Hand and small machine tools	479,049	1,670,905	2,324,788	462,663	1,933,177	674,098	2,407,884	1,254,761	11,207,325	312,603	11,519,928	6,705,099	6,515,641	8,272,770
Air brake material	442,162	3,316,310	8,889,239	2,135,865	2,011,846	2,200,088	3,164,058	2,682,507	24,842,075	291,540	25,133,615	14,494,419	9,180,561	12,119,360
Appliances for locomotives	811,512	3,405,179	3,784,901	909,526	3,070,720	2,202,831	3,551,116	2,006,296	19,742,081	337,762	20,079,843	13,196,167	10,904,587	13,781,679
Automotive materials	449,051	1,865,620	1,078,055	78,897	632,420	873,665	2,493,840	547,119	8,018,667	62,375	8,018,042	5,429,246	5,475,766	5,629,235
Total iron and steel products	13,305,573	75,897,328	113,755,126	25,815,472	56,948,179	45,767,397	91,111,550	39,184,543	461,785,168	13,073,391	474,858,559	331,277,746	288,953,403	365,344,474
MISCELLANEOUS														
Cement	43,813	1,340,908	390,396	121,975	142,593	166,749	438,097	152,145	2,796,676	13,597	2,810,273	2,065,595	1,887,386	1,959,895
Lubricating and illuminat. oils, etc.	886,213	3,575,930	3,870,881	1,199,872	3,098,424	2,750,664	4,657,491	1,729,077	21,768,552	1,187,833	22,956,385	17,637,769	17,163,850	19,969,601
Non-ferrous metal	1,606,437	8,476,484	4,448,531	760,515	5,262,301	3,470,670	5,448,318	3,281,528	32,794,784	774,186	33,568,970	21,589,758	20,851,744	28,272,450
Ballast	338,179	2,416,979	2,623,320	894,282	2,594,355	778,507	2,372,768	1,561,549	13,579,939	64,671	13,644,610	10,827,953	9,426,750	11,386,362
Electrical materials	1,550,588	1,566,507	7,025,563	1,233,293	2,228,731	1,388,176	3,063,285	1,331,141	19,387,284	2,001,559	21,388,843	15,245,482	12,534,154	17,812,359
Stationery and printing	1,342,291	2,597,036	3,987,925	855,988	2,667,701	1,804,713	3,337,388	1,309,577	17,902,619	1,062,320	18,964,939	15,464,351	14,675,895	17,051,954
Commissary supplies	1,092,334	3,168,655	4,402,588	396,518	2,935,824	2,477,588	6,696,184	1,775,839	22,945,530	464	22,945,994	17,289,689	16,434,092	20,028,189
Rubber and leather goods	332,764	1,779,580	2,369,124	429,428	867,887	993,301	2,643,530	844,645	10,260,259	1,309,795	11,570,054	7,072,190	7,055,428	8,369,141
Glass, paint, chemicals, etc.	1,193,095	4,346,346	9,622,831	1,746,313	5,100,730	3,816,134	8,496,633	4,411,099	38,733,181	1,100,037	39,833,218	29,502,249	28,799,720	32,903,739
Arch brick for locomotives	155,234	211,426	874,052	375,855	484,399	198,423	811,414	499,967	3,610,770	90,091	3,700,861	2,564,907	2,678,352	3,052,705
Passenger car trimmings	535,476	1,418,539	1,782,197	591,601	1,244,844	1,034,214	2,060,594	799,609	9,467,074	563,702	10,030,776	6,606,024	5,862,153	10,483,164
Loco. train and station supplies	645,997	2,743,294	3,222,730	350,634	1,691,947	1,326,131	3,142,148	1,265,711	14,388,592	1,332,078	15,720,670	9,974,705	8,726,276	10,758,810
All other materials	700,913	3,125,042	2,803,405	3,534,345	4,036,973	9,381,594	13,738,225	1,201,358	38,521,855	2,040,457	40,562,312	31,514,204	25,748,856	30,647,574
Total miscellaneous	10,423,334	36,766,726	47,463,543	12,490,619	32,356,709	29,586,864	56,906,075	20,163,245	246,157,115	11,540,790	257,697,905	187,354,876	171,844,656	212,695,943
GRAND TOTAL 1941	45,666,932	194,894,627	237,798,603	55,343,917	157,767,528	130,897,247	246,058,603	94,601,523	1,163,028,980	44,743,263	1,207,772,243	889,777,512	805,125,779	990,021,949
Per cent of operating revenues	19.8	20.1	15.6	17.7	22.6	21.5	24.7	20.5	21.8	36.8	22.0	20.0	19.6	23.4
GRAND TOTAL 1940	34,477,391	154,212,518	153,403,722	51,351,918	123,540,553	100,239,289	176,366,387	62,380,942	855,972,720	33,804,792				
Per cent of operating revenues	18.6	19.4	16.1	14.1	18.8	16.6	24.1	17.5	19.9					
GRAND TOTAL 1939	32,367,342	132,117,125	125,231,183	42,740,376	108,099,499	92,455,449	172,530,179	64,832,208	770,373,361	34,752,418				
Per cent of operating revenues	18.0	18.3	15.2	17.7	21.1	20.1	24.5	18.7	19.6					
GRAND TOTAL 1937	39,195,634	165,487,566	171,242,975	44,666,587	117,124,609	116,248,967	227,773,272	77,195,894	958,935,504	31,085,990				
Per cent of operating revenues	21.6	21.6	19.7	17.7	22.7	31.2	31.2	20.2	23.0					

the materials they ordered last year, their receipts continued large all year and, with fuel included, deliveries were in excess of $100,000,000 a month since last August; they totaled $109,976,000 in January of this year. This total included $34,767,000 of fuel, $2,234,000 of rail, $5,425,000 of cross ties and $67,500,000 of maintenance and repair materials, or a total, exclusive of fuel, of $75,209,000, representing materials received from manufacturers in January, exclusive of materials furnished by manufacturers to locomotive and car builders. The material, exclusive of fuel, received from manufacturers by railroads in January, according to present information, was 45 per cent larger than the total in January, 1941, 41 per cent larger than in January, 1940, and about 125 per cent larger than in January, 1939, but about 1 per cent less than the corresponding purchases in December, 1941, and about 7 per cent less than the corresponding deliveries of materials, exclusive of fuel, in January, 1929 and January, 1930. As compared with January, 1941, the deliveries of materials and fuel, exclusive of new equipment, to railroads in January, 1942, showed an increase of 59 per cent on the Alton, 88 per cent on the Atlantic Coast Line, 68 per cent on the Chicago and Eastern Illinois, 83 per cent on the Burlington, 57 per cent on the Rock Island, 55 per cent on the Delaware and Hudson and the Great Northern, 30 per cent on the Illinois Central, 20 per cent on the Lehigh Valley, 130 per cent on the Missouri-Kansas-Texas, 58 per cent on the New York, New Haven and Hartford, 60 per cent on the Northern Pacific, 58 per cent on the Southern Pacific, and 89 per cent on the Union Pacific.

With the growing scarcity of critical materials for military needs and the increasingly severe restrictions being placed on the amount of materials which the rail-

(*Continued on page 663*)

Purchases from Commercial Firms by Short Lines and Switching and Terminal Companies and Others in 1941

	Fuel	Rail New	Cross Ties	Miscellaneous	Total
Akron & Barberton Belt	$33,339	.....	$22,581	$41,663	$98,942[1]
Allegheny & South Side	4,878	.....	94	7,010	11,982
Aliquippa & Southern.	100,570	$58,802	34,075	283,323	602,670[2]
Alton & Southern	147,783	48,708	39,590	179,015	153,839
Angelina & Neches River	6,627	.....	18,240	.....	24,867
Atlantic & St. Andrews Bay	70,894	.....	29,342	114,303	391,824[3]
Atlantic & Yadkin	67,831	.....	57,664	17,958	145,625[4]
Bath & Hammondsport.	2,525	.....	1,593	2,212	6,330
Bauxite & Northern...	4,574	.....	3,366	24,559	32,499
Belfast & Moosehead Lk.	19,538	.....	.....	.....	19,538
Belt of Chicago	607,492	50,614	97,906	381,373	1,137,385
Bingham & Garfield...	27,557	36,132	33,599	56,551	153,839
Birmingham Southern..	49,917	26,963	18,523	134,946	1,120,039[5]
Buffalo Creek & Gauley	18,000	.....	12,000	25,000	55,000
Camas Prairie	124,009	.....	8,834	67,088	199,931
Carrollton	3,229	.....	925	2,280	7,359[6]
Central Indiana	5,761	.....	14,368	7,079	27,208
Chattahoochee Valley ..	14,656	.....	24,974	7,835	47,465
Chicago, Attica & Sou...	27,928	.....	16,928	18,810	63,666
Chi. & West. Indiana..	153,060	56,531	41,567	538,232	789,390
Chicago, West Pullman & Sou.	67,599	.....	702	112,527	180,828
Cincinnati Union Term.	158,978	.....	4,136	449,835	612,949
Clarendon & Pittsford.	13,467	.....	3,370	900	17,737
Columbia, Newberry & Laurens	49,834	.....	25,272	24,220	99,326
Copper Range	13,119	.....	12,225	15,665	70,948[7]
Coudersport & Port Allegany	4,880	.....	4,510	3,170	12,560
Cumberland & Pennsylvania	38,083	4,562	21,224	64,711	130,797[8]
Danville & Mount Morris	3,703	.....	5,122	5,149	13,974
Danville & Western ..	29,162	.....	19,602	22,153	70,917
Dardanelle & Russellville	2,103	.....	1,748	4,200	8,051
Des Moines Union....	83,027	.....	11,678	39,483	134,188
Detroit Terminal	171,587	13,086	91,890	87,200	363,763
Donora Southern	41,715	31,028	22,605	108,248	203,596
Duluth & Northeastern	10,887	.....	6,847	8,226	25,960
Durham & Southern ..	32,986	1,200	24,753	29,481	88,420
East Broad Top	20,622	.....	8,810	53,418	82,850
East Erie Commercial	5,291	4,433	7,269	10,197	95,647[9]
Flemingsburg & Northern	942	.....	711	474	2,127
Flint River & N.-Eastern	4,083	.....	2,317	120	6,520
Galveston, Houston & Henderson	31,267	1,043	24,583	57,500	116,245[10]
Garden City Western..	2,683	.....	2,035	620	5,338
Grt. Western (Denver)	13,180	.....	20,327	10,032	43,539
Greenville & Northern.	4,027	.....	2,502	2,230	8,759
Gulf & Northern	2,894	.....	3,249	1,482	7,625
Harbor Belt (Los Ang.)	51,581	.....	32,827	58,327	142,735
High Pt., Thomasville & Denton	18,864	.....	7,315	58,758	87,157[11]
Illinois Northern	53,655	4,163	5,364	71,976	135,158
Ironton (Pa.).	13,729	.....	.....	1,255	14,984
Jacksonville Terminal..	88,019	12,188	9,182	256,996	366,385
Johnstown & Stony Crk.	3,093	201	3,089	11,008	17,391
Kansas City Connecting	2,288	604	2,156	4,070	9,118
Kansas City Terminal..	246,130	47,517	54,720	588,456	1,177,143[12]
Kentucky & Tenn.....	21,192	.....	3,570	14,960	39,722
Kentucky & Ind. Term.	224,122	45,822	24,772	635,012	930,549[13]
Lake Champ. & Moriah	10,685	2,641	6,467	34,078	53,871
Lake Superior Term...	50,612	.....	3,616	31,036	85,264
Laurinburg & Sou. ...	8,880	.....	4,278	1,200	15,403[14]
Ligonier Valley	3,740	.....	3,884	3,724	11,348
Longview, Port & Nor.	25,901	.....	8,450	60,010	94,361
Louisiana & Northwest	20,139	.....	21,745	9,187	51,071
Lowville & Beaver River	4,200	.....	2,600	2,600	10,275[15]
Los Angeles Junct. ..	5,566	.....	.....	.....	171,974[16]
Macon, Dublin & Savan.	78,846	.....	46,521	79,994	206,227[17]
Magma Arizona	6,626	.....	7,263	5,761	19,650
Manistee & Northeast.	19,634	.....	15,969	16,184	51,787
Manufacturers (St. L.)	16,963	2,266	5,819	38,431	225,337[18]
Marianna & Blountstown	3,043	.....	5,141	715	8,899
Maryland & Penna. ..	38,468	.....	16,045	75,104	129,617
Meridian & Bigbee	20,109	.....	24,486	33,976	78,571
Midland Term.	71,573	.....	19,354	40,375	131,959[19]
Mississippi Export	6,414	.....	5,048	1,500	48,963[20]
Morehead & North Fork	1,350	.....	1,783	4,596	7,729
Minnesota Transfer ...	89,371	.....	11,874	180,848	462,093[21]
Nevada Copper Belt...	2,388	.....	3,848	1,587	7,823
Newburg & So. Shore	78,283	16,087	13,899	71,290	438,813[22]
New Orleans Term...	109,968	.....	1,117	164,097	275,182
New York & Long Br.	6,671	44,832	.....	108,988	160,491
Northeast Okla.	8,685	.....	25,000	115,543	216,744[23]
North La. & Gulf.....	8,156	.....	8,353	8,709	25,884[24]
Northern Pac. Term. ..	93,119	.....	36,217	181,879	311,215
Oregon & Northwest..	32,437	.....	9,092	20,035	61,564
Oregon, Pac. & East..	4,193	.....	4,297	2,428	10,918
Pacific Coast (Wash.)..	13,964	.....	14,821	28,013	56,798
Pacific Coast (Calif.).	1,951	.....	37	13,354	15,342
Pitts., Allegheny & McKees Rocks	6,869	.....	2,206	4,119	13,194
Pitts., Chart. & Yough.	137	4,302	3,101	12,690	20,230
Port Huron & Detroit.	13,800	.....	.....	9,000	25,617[25]
Port Townsend Sou...	.....	.....	2,431	2,469	4,900
Prescott & Northwest..	7,167	.....	10,500	.....	17,667
Pullman	9,595	.....	14,541	12,534	156,250[26]
Quanah, Acme & Pacific	50,865	.....	30,018	39,826	120,709
Rahway Valley	7,413	.....	915	5,983	14,311
Raritan River	36,455	2,222	8,934	35,973	83,584
Ray & Gila Valley...	1,574	355	5,355	5,800	13,084
River Term.	94,700	2,200	700	80,000	266,380[27]
St. Joseph Belt	5,143	.....	.....	.....	5,143
St. Louis & Hannibal	9,304	.....	6,972	4,180	20,456
St. Louis & Troy.....	701	.....	350	865	2,378[28]
St. Louis & O'Fallon.	3,637	.....	.....	20,221	23,858
San Luis Central.....	1,892	.....	1,268	650	3,810
Sierra	12,774	.....	6,655	62,928	85,566[29]
Sioux City Term.....	13,650	.....	6,501	6,381	26,537
South Omaha Term....	28,441	.....	1,540	17,874	47,855
Susquehanna & New York	35,246	.....	11,762	12,515	59,523
Tenn., Ala. & Ga.....	31,096	.....	20,814	52,237	104,147
Term. Ry Ala. State Docks	23,640	4,795	7,544	29,281	117,316[30]
Term. of St. Louis....	863,218	123,260	60,289	1,723,436	2,770,003
Toledo Term.	100,399	.....	22,115	105,531	228,819[31]
Tonopah & Goldfield..	6,497	.....	4,496	7,305	18,298
Trona	22,711	.....	3,457	19,068	48,326[32]
Tuskogee	2,767	.....	3,115	1,619	7,501
Union of Pittsburgh..	767,942	1,872	107,383	1,306,290	3,549,595[33]
Unity	2,831	.....	1,537	294	4,662
Ventura County	1,189	.....	.....	290	1,479
Verde Tunnel & Smelter	25,190	.....	6,864	34,912	66,966
Western Allegheny.....	12,092	.....	6,439	8,709	27,240
Winston-Salem Southbound	46,367	.....	20,255	11,000	77,622
Wrightsville & Tennille	14,716	.....	.....	3,590	18,306
Yosemite Valley	28,262	.....	9,458	39,619	77,339
Youngstown & Northern	52,036	2,321	2,592	26,121	83,070
Electric Railways*					
Chicago, So. Shore & So. Bend	3,845	29,017	24,140	215,008	291,193[34]
Denver & Intermountain	.....	.....	4,700	12,184	16,884
Oklahoma City Jct....	.....	.....	1,008	721	1,729
Piedmont & Northern.	.....	60,868	44,407	260,045	468,600[35]
Visalia Electric	4,503	.....	4,555	4,940	13,998

* Not included in purchases by U. S. railroads.

Totals include new equipment as follows: [1] $1,359 highway; [2] $125,900 railroad; [3] $2,865 highway, $174,420 railroad; [4] $2,172 highway; [5] $889,690 railroad; [6] $925 highway; [7] $29,939 railroad; [8] $2,217 highway; [9] $658 highway, $67,800 railroad; [10] $1,852 highway; [11] $2,220 highway; [12] $240,320 railroad; [13] $821 highway; [14] $1,045 highway; [15] $875 highway; [16] $166,408 railroad; [17] $866 highway; [18] $1,063 highway, $160,795 railroad; [19] $657 highway; [20] $36,001 railroad; [21] $180,000 railroad; [22] $259,254 railroad; [23] $14,339 highway, $53,177 railroad; [24] $666 highway; [25] $2,817 highway; [26] $119,580 railroad; [27] $88,780 railroad; [28] $462 highway; [29] $3,209 highway; [30] $52,056 railroad; [31] $774 highway; [32] $3,090 highway; [33] $9,500 highway, $1,356,608 railroad; [34] $19,183 highway; [35] $8,842 highway, $94,438 railroad.

New 400's Give Unique Service

C. & N. W. gets high utilization of streamliners equipped with 25 new Pullman-Standard cars

BY the installation of four new streamlined trains in January, the Chicago & North Western has materially improved passenger service to a large number of cities in Wisconsin, Minnesota and upper Michigan. This has not only had the effect of serving an area that is very largely industrialized, with many plants engaged in war production, but has also released a pool of conventional equipment for other services, and made it available for troop movement if necessary.

The new trains necessitated the purchase of additional car equipment and, to supplement the 20 cars built by the Pullman-Standard Car Manufacturing Company and placed in service on the "400" in the Fall of 1939, twenty-five new passenger cars of Pullman-Standard construction, were delivered to the C. & N. W. last January and added to the pool of equipment available for making up "400" trains. Additional motive power was also required and assignments to this service include one 2,000-hp. single-unit and one 4,000-hp. double-unit Diesel locomotives, built by the Electro-Motive Corporation; one 2,000-hp. single-unit Diesel-electric, built by the American Locomotive Company; and two Alco 4-6-2 steam locomotives which have been streamlined and painted to conform to the exterior color scheme of the new cars.

The operation of these new trains is unusual in several respects. They are so scheduled as to make their heaviest traffic runs at the time of day most convenient to the traveler. Some of them make short round trips between adjacent metropolitan centers during part of the day and then proceed to points 200 or more miles distant in the afternoon. Another makes a triangular round trip in the afternoon after being engaged in other service in the morning. The schedule of still another is so adjusted to that of the original Twin Cities 400 as to expand the service over a much wider area.

The territory served is not only heavily industrialized in most sections, but comprises winter sport and summer tourist centers as well, and the adaptation of the schedules to serve these diverse needs presented interesting problems. As a result, coaches are added or omitted from the trains as the traffic needs dictate. Extra coaches are added for week-end travel. The purchase of lunch counter-lounge cars as well as full dining cars permits the elimination of much dead weight at times of day and days of the week when it is not needed. The full diners are put on and taken off as experience with the traffic on the various runs indicates, but there is always dining service available on the lunch counter cars.

One Train Averages 775 Miles a Day

In order to obtain the maximum utilization from this new equipment, a system of scheduling and operation has been set up that is unique in many respects. The trains attain a high average daily mileage, amounting in one case to 775 miles. The difference in service demands as between week-day and week-end travel is also recognized by a change in scheduling for the two periods.

One set of the equipment consists of the power unit

and four cars. These are a mail-baggage-tavern car, with a 15-ft. mail and 13-ft. baggage compartment, 16 seats in the taproom and 9 seats at the lunch counter; 2 coaches, with 56 seats and an 8-seat smoking compartment; and a parlor car with 22 parlor seats; 8 smoking-room seats and 5 drawing-room seats. This train leaves Chicago, with a single Diesel-electric power unit, at 7:30 a. m. and makes the 85-mile run to Milwaukee in 75 min., or at the overall speed of 67.8 m. p. h., including three stops en route. After 15 min. in Milwaukee, the train returns to Chicago at the same speed, arriving at 10:15 a. m., thus completing a round trip between Chicago and Milwaukee, with three intermediate stops in each direction, and a 15-min. wait in Milwaukee to unload passengers and load for the return trip, in 165 min. for the 170 miles. This train, with another coach and a 56-seat diner added, leaves Chicago again at 11 a. m., and proceeds to Green Bay, Wis., via Milwaukee and the Shore line route, making the run of 200 miles in 230 min., or at an overall speed of 52.2 m. p. h., with 10 intermediate stops. Returning via the Valley line from Green Bay to Milwaukee, the train makes the 213-mile run to Chicago in 225 min., or at an overall average speed of 56.7 m. p. h., with 9 intermediate stops. This train thus completes a total of 585 miles per day.

On Fridays and Saturdays, an additional coach is added to the train for the round trip between Chicago and Green Bay, making it a 7-car train, plus the power unit. This extra coach, as well as a double power unit, is carried on Sundays. The Sunday train makes one round trip between Chicago and Menominee, Mich., via the Valley line between Milwaukee and Green Bay in both directions, a total Sunday mileage of 530 miles.

A second train, consisting of 1 parlor car, 2 coaches, and a baggage-tavern car with a 28-ft. 9-in. baggage space instead of baggage-mail space, leaves Milwaukee at 7:25 a. m. for an 80-min. run with a single power unit, arriving in Chicago at 8:45. It then leaves Chicago at 9:45 a. m. for a round trip to Milwaukee, 80 min. each way, with a 25 min. layover in Milwaukee, arriving back in Chicago at 12:50 p. m. At 1:30 p. m., with a dining car added, the train makes a 75-min. run to Milwaukee. After a 15 min. stop there, it proceeds west to Madison, making the 82 miles in 90 min., with one intermediate stop. After a half-hour layover in Madison, this train returns to Chicago via the Wisconsin division, running the 130 miles in 150 min., or an overall speed of 52 m. p. h., with four intermediate stops.

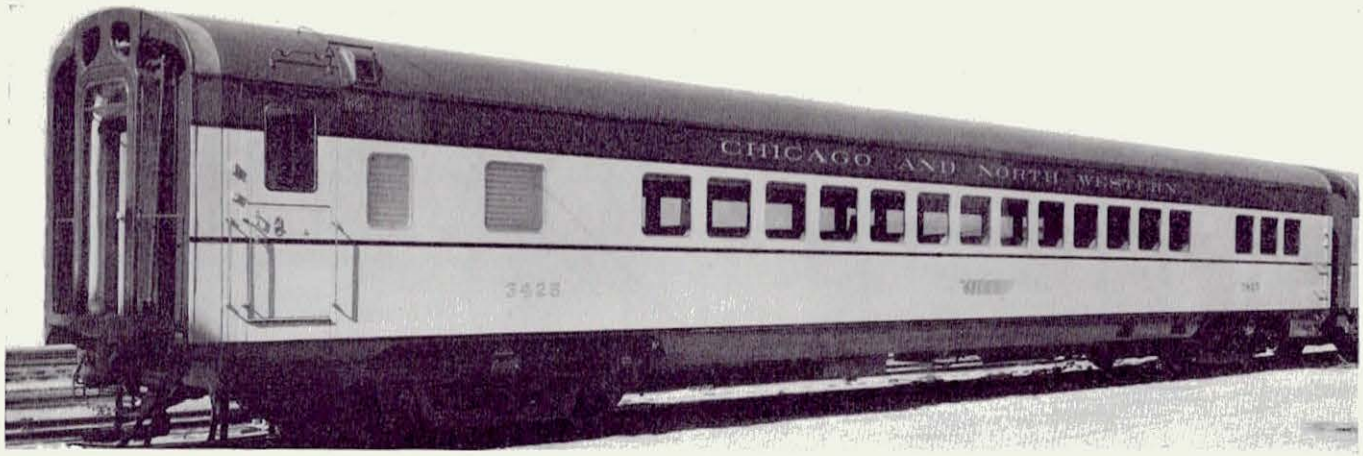
On each week-day except Saturday, this streamliner, the Capitol 400, returns to Milwaukee with a single power unit, on an 80-min. run, arriving in Milwaukee at 9:35 p. m., for a total of 651 miles per day. On Saturday evenings, the train remains in Chicago in preparation for the Sunday schedule. This involves a round trip to Green Bay, via the Shore line in each direction, the 200 miles being run in 220 min. in each direction, with eight intermediate stops in each case. The train then makes an 80-min. run back to Milwaukee to be ready for its early Monday morning departure from that point. This particular streamliner makes 489 miles each Sunday.

A third set of equipment, comprising seven cars—1 mail-baggage-tavern car; 4 coaches; 1 parlor car and 1 dining car—and a double power unit, leaves Ishpeming, Mich., each week-day, at 7:15 a. m., and runs the 380 miles to Chicago in 445 min., or at an overall speed of 51.2 m. p. h., with 19 intermediate stops. Returning, it makes a 394-mile run to Ishpeming in 440 min., with the same number of stops, or an overall speed of 53.7 m. p. h. This train runs via the Shore line southbound, and via the Valley line northbound, with a total of 775 miles per day. On Fridays and Saturdays, two coaches are added southbound and, on Sunday, one extra coach is added northbound.

A Parlor-Car Interior

On Saturday evening, this train runs only from Chicago to Menominee on its northbound trip. It leaves Menominee on Sunday morning, running to Chicago. On Sunday afternoon, the train leaves Chicago on its reg-

One of the New C. & N. W. Diners Built By Pullman-Standard

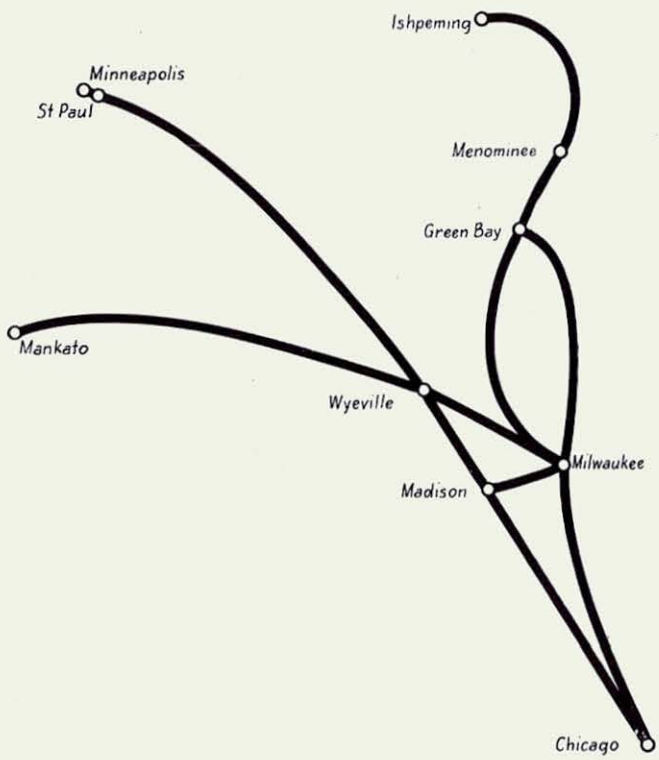


One of the Sixteen New Coaches

ular schedule for Ishpeming, thus making a Sunday mileage of 657.

Re-equipped Minnesota 400 Is Steam Operated

The two 400's between Chicago and the Twin Cities are, of course, still in operation on their regular schedule. A new streamliner, operated with a streamlined steam locomotive, has supplanted the conventional equipment on the Minnesota 400, which has been operated for some



An Important Area Is Given the Benefit of "400" Service

years as a "Twin Cities 400" connection. This new train consists of a baggage-tavern-lounge car; 1 coach with 56 regular and 8 smoking compartment seats; 1 coach with 48 regular and 8 smoking compartment seats; and a parlor car with 22 regular, 8 smoking compartment and 5 drawing room seats. This train leaves Mankato, Minn., at 12:45 p. m. and runs via Rochester, Minn., to Wyeville, Wis., where it makes connections with the southbound Twin Cities 400. This run of 217 miles is made in 285 min., with 7 intermediate stops, or at an overall speed of 45.9 m. p. h. After waiting at Wyeville until the arrival of the northbound Twin Cities 400, the new streamliner returns to Mankato, arriving there at 11:30 p. m., for a daily total of 434 miles. The operation on Sunday is the same.

Under this arrangement, the C. & N. W. operates a total of 4,235 miles of streamlined train schedules daily, including the City of Denver between Chicago and Omaha. When the periodical departures of the two Cities of Los Angeles, two Cities of San Francisco and one City of Portland are added, this total becomes a striking figure of numerous schedules by trains that are extremely modern.

The accompanying schematic map gives a picture of this operation, so far as the new trains are concerned. It will be noted that 7 streamliners are available northbound and 6 southbound between Chicago and Milwaukee each week-day. Of these, 5 make the 85-mile run in 75 min., 6 in 80 min., and 2 in 85 min. Green Bay is served by two streamliners daily in both directions from and to Milwaukee and Chicago, and three in each direction on Sunday.

Taking the seven days from February 2 to February 8, inclusive, as an example, the C. & N. W. operated 59 streamlined schedules out of Chicago, and there were 60 streamlined train arrivals during the same period. During these seven days, 66 scheduled streamliners arrived in Milwaukee from both directions, and 70 such trains departed from Milwaukee, north and southbound.

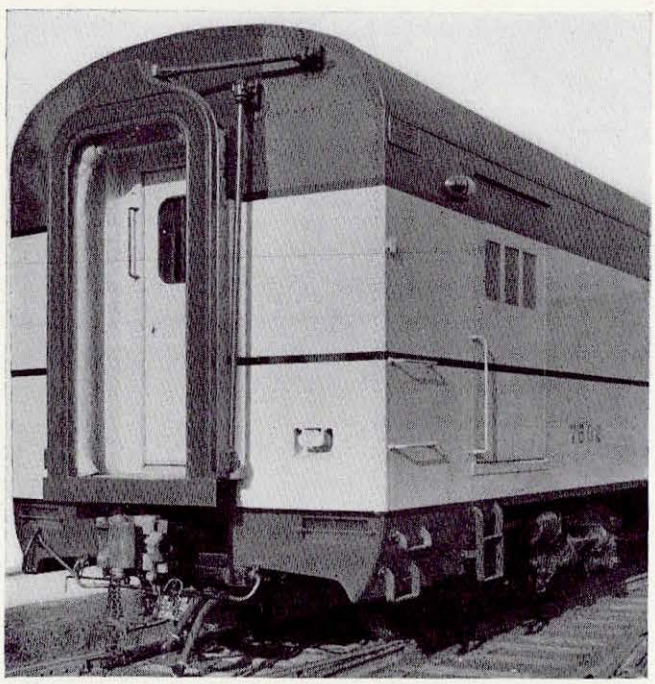
In all, 48 cities are served with the high-speed schedules of the 400's. These schedules are, of course, not necessarily permanent. They may be changed as the traffic demands change or increase. The new trains, however, have proved exceedingly popular and, in the course of a trip from Chicago to Ishpeming, for example, it is not at all unusual to have a total of 45 to 50 parlor car passengers on and off at intermediate stations, on a train that has only 22 regular parlor car seats. The coach business has shown similar results.

Principal Features of the New Car Equipment

The 25 new passenger cars, built by Pullman-Standard, include four mail-baggage-tavern cars in various combinations, as mentioned: 16 modern coaches, including one with a nurse's room; 3 diners and 2 parlor cars. These cars embody the same general type of car body and truck construction as provided in the earlier "400" equipment, illustrated and described in the *Railway Age*

of November 11, 1939, pages 736 to 741, inclusive. The lightweight, welded car bodies are made primarily of U. S. S. Cor-Ten low-alloy high-tensile steel. Little, if any, change has been made in the design, heating, lighting, air-conditioning equipment, etc. Specialties used in the new cars are shown in the table.

Some interesting innovations have been made, however, in the interior decorative treatment and color schemes. The taproom section of each of the four baggage-tavern cars, for example, has figured carpet in beige, tan, and brown, seat coverings in blue leather, draperies of rose and gold, walls covered with sheet cork, and ceilings done in light peach. A semi-circular bar is next to the taproom section and, at this part of the car and in the coffee-shop section, the flooring is in terra cotta marbleized rubber tile with a cream color inlay and a blue border. Seat covering for the counter stools is in blue leather, the counter top in blue, linen-finish Formica with cream and red inlays. The same red leather used at the face of the bar is also used at the face of the lunch counter. The walls are painted in two shades of gray and the ceilings in cream with a ceramic blue band outlining the ceiling lighting which follows the contour of the lunch counter. Attractive draperies and decorative mirrors are installed. One of the baggage-tavern cars has a small lounge-section adjacent to the coffee shop.



The Baggage-Tavern-Lounge Car

Lunch Counter in One of the Baggage-Tavern Cars

One group of four coaches is finished in a color scheme of beige, blue and terra cotta, a second group of four in terra cotta and green, the third in yellow, blue and apricot and the fourth in blue, copper and terra cotta.

Decorative Treatment of the Diners and Parlor Cars

The general color scheme for each of the three dining cars is rose and green. The floor covering is a modern-figured carpet in colors of rose and henna. Seat covering for part of the chairs is in green leather, and for the balance of the chairs, red leather. The distribution of color for the chairs uses eight chairs at each end of the room in green, while the chairs in the center portion are in red, thus breaking up the monotony of a single color throughout. Draperies used in the room are in rose and gold; mirrors, Venetian blinds and tapes are in flesh tone. The wainscotings are covered with sheet cork. The background for the bulkhead panels and the ceiling are in two shades of aqua-green.

The basic color tones in the two parlor cars are either blue or green and coral. Carpets in the first car, which may be considered typical, also emphasize tan and henna, with seat coverings in pebbletweed. Window shades are in two shades of coral with pattern lines running horizontal. Pier panels are in tan leather with gold-tooled lines. Photomurals at the forward bulkheads of the room are generally scenic in tone, reflecting the country through which the trains operate.

The smoking, lounge and powder rooms in this car are finished in tan, blue and coral with two-toned blue

The Lounge in One of the Baggage-Tavern-Lounge Cars

carpet. Chairs are attractively upholstered in either rust or blue and, in conjunction with harmonious colored draperies, window shades, tan walls and cream ceiling, produce a definitely pleasing effect in general color scheme.

Partial List of Materials and Equipment on 25 New C. & N. W. Passenger Cars

Cor-Ten steel	Carnegie-Illinois Steel Corporation, Pittsburgh, Pa.
Insulation	Gustin-Bacon Mfg. Co., Kansas City, Mo. Johns-Manville Sales Corporation, New York.
Truck castings	General Steel Castings Corporation, Eddystone, Pa.
Wheels	Armco Railroad Sales Company, Middletown, Ohio.
Roller bearings and boxes	The Fafnir Bearing Company, New Britain, Conn.
Side bearings; unit-cylinder clasp brakes	American Steel Foundries, Chicago.
Air-brake equipment	Westinghouse Air Brake Company, Wilmerding, Pa.
Tight-lock couplers	National Malleable and Steel Castings Co., Cleveland, Ohio.
Metallic steam connectors	Barco Manufacturing Co., Chicago.
Draft-gear rubber mats	Waugh Equipment Company, New York.
Diaphragms:	
Canvas (inner)	Adams & Westlake Company, Elkhart, Ind.
Rubber (outer)	United States Rubber Company, New York.
Vestibule side curtains; window sash	Adams & Westlake Company, Elkhart, Ind.
Window glass	Pittsburgh Plate Glass Company, Pittsburgh, Pa. Pressed Prism Plate Glass Company, Chicago.
Engine-generator units	Waukesha Motor Company, Waukesha, Wis.
Batteries	Electric Storage Battery Company, Philadelphia, Pa. Gould Storage Battery Company, Depew, N. Y. K. W. Battery Company, Chicago.
Lamp and generator regulators	Safety Car Heating & Lighting Company, New York.
Lighting fixtures	Luminator Company, Chicago. Pyle-National Company, Chicago. Safety Car Heating & Lighting Company, New York.
Air-conditioning system:	
Ice engine	Waukesha Motor Company, Waukesha, Wis.
Cooling unit	The Trane Company, LaCrosse, Wis.
Air filters	Air-Maze Corporation, Cleveland, Ohio.
Air-conditioning controls; steam heating equipment	Vapor Car Heating Company, Chicago.
Window capping	Caf-O-Lite Company, Muskegon, Mich.
Venetian blinds	Kesner Company, Chicago.
Window-shade fixtures	National Lock Washer Company, Newark, N. J.
Reclining seats	Heywood-Wakefield Company, Gardner, Mass.
Chairs, loose	General Fireproofing Company, Youngstown, Ohio. Heywood-Wakefield Company, Gardner, Mass.
Fabrics and leather	L. C. Chase Company, New York. Collins & Aikman Corporation, New York. Eagle-Ottawa Leather Company, Grand Haven, Mich. Massachusetts Mohair Plush Company, Boston, Mass.
Formica	Formica Insulation Company, Cincinnati, Ohio.
Range equipment	Detroit Michigan Stove Company, Detroit, Mich.
Kitchen steam table	The Stearnes Company, Chicago.
Washstands and fittings	Adams & Westlake Company, Elkhart, Ind. Crane Company, Chicago.
Hoppers	Duner Company, Chicago.
Hopper seats	Brunswick-Balke-Collender Company, Chicago.
Floor covering:	
Rubber	Goodyear Tire & Rubber Company, Akron, Ohio. United States Rubber Company, New York.
Carpet	Charles P. Cochrane Company, Chicago.
Linoleum	Armstrong Cork Company, Lancaster, Pa.
Carpet padding	United States Rubber Company, New York.
Paints:	
Exterior	E. I. du Pont de Nemours & Company, Wilmington, Del.
Interior	Pittsburgh Plate Glass Company, Pittsburgh, Pa.

"General American Transportation. What It Is; What It Does."—The General American Transportation Corporation, 135 South La Salle street, Chicago, in a booklet of 32 pages, 9¾ in. by 12¾ in., explains and illustrates in detail each of the company's enterprises—the G. A. T. X. fleet; freight-car building; plate and welding division; tank storage terminals; motor-coach manufacture, and precooling division. The booklet is printed in two colors.

I. C. C. Wipes Out Soo Line Equities

Washington, D. C.

A FINAL plan of reorganization for the Minneapolis, St. Paul & Sault Ste. Marie which will reduce the capitalization from $169,202,628 (with, additionally, $28,459,266 of accrued and unpaid interest on fixed-interest bearing debt as of January 1, 1941) to about $95,000,000 was promulgated on March 25 by Division 4 of the Interstate Commerce Commission. Under the terms of the final plan, which will become effective as of January 1, 1941, the annual fixed interest charges will be reduced from $6,631,322 to approximately $53,415, all on equipment obligations which will be assumed undisturbed by the reorganized company.

Also, Division 4 finds that the equities of the holders of general unsecured claims not entitled to priority and of the preferred and common stocks have no value and no provision is made for their participation in the plan.

The final plan of Division 4 follows closely that proposed in September of last year by Examiner Ralph H. Jewell, details of which were set out in the *Railway Age* of September 6, 1941, page 380.

New Capitalization Is Set Out

The new capitalization and the annual charges under the plan are set out as follows:

Issue	Amount	Annual Requirements
Equipment obligations	$2,663,829	$53,415—Fixed Int.
First-mortgage, series-A 4½% income bonds	[1]10,000,000	[1]450,000—Int. conting. 250,000—Mandatory cap. fund
General-mortgage, series-A 4% income bonds	20,129,076	805,163—Int. conting.
Common stock (no-par), 719,180 shares	62,209,070	100,645—Sink. fund
Total capitalization	95,001,975	1,659,223

[1] Of the total of $10,000,000, principal amount, of first mortgage, series-A income bonds, $1,948,369 are to be held in the treasury of the reorganized company and used to reimburse the company for reorganization expenses and for other proper corporate purposes. Until these treasury bonds are issued the annual interest requirement will be $87,677 less than the interest shown.

Under the final plan holders of such of the present first consolidated mortgage bonds which matured on July 1, 1938, as bear an interest guaranty by the Canadian Pacific will receive payment in cash by the Canadian Pacific of unpaid interest which accrued on January 1 and July 1, 1938. Holders of all first consolidated bonds will receive in cash about 3.3 per cent of their total claims, including accrued and unpaid interest to January 1, 1941 (not paid by the Canadian Pacific under its guaranty), about 10 per cent of their total claims in new first mortgage series A 4½ per cent income bonds, about 25 per cent in new general mortgage four per cent series A income bonds, and about 0.727 share of new no-par common stock for each $100 of their claims.

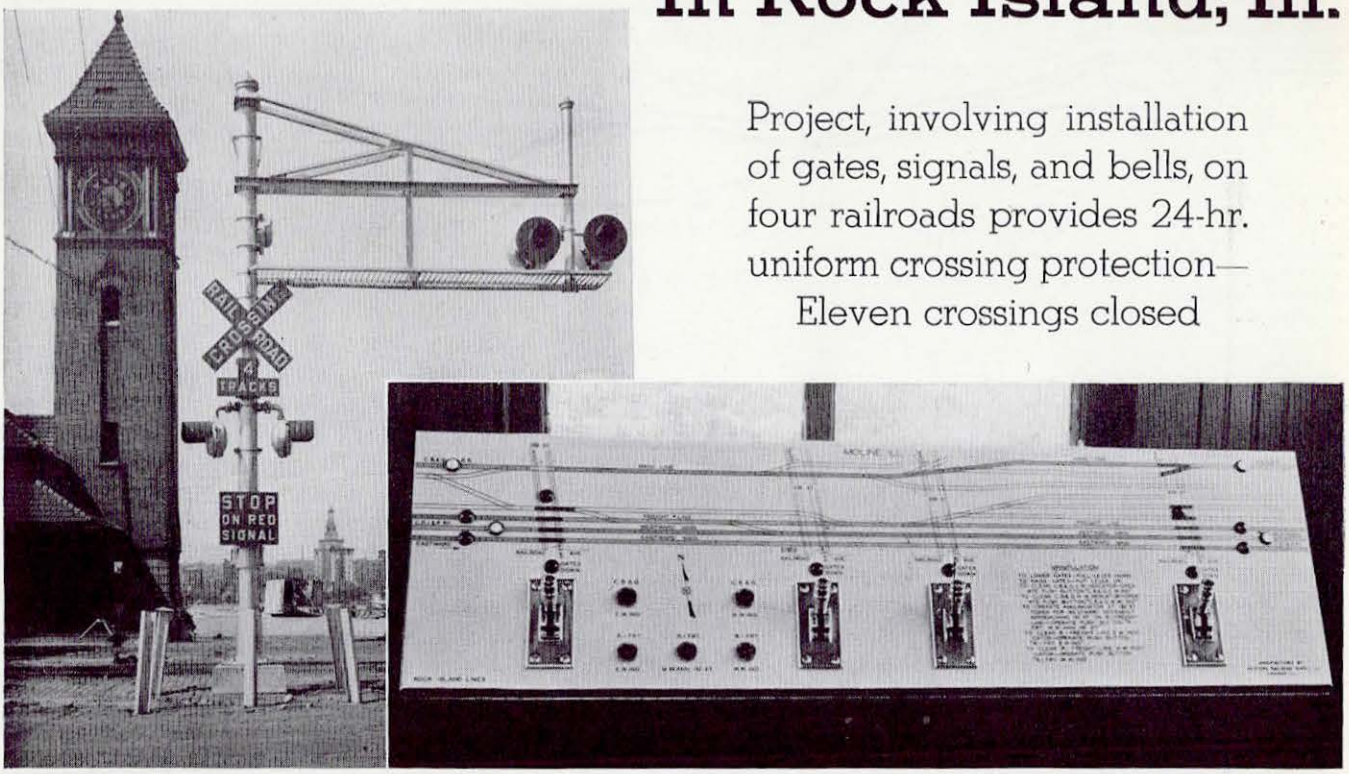
Holders of the present second mortgage four per cent 50-year gold bonds, maturing January 1, 1949, all of which bear an interest guaranty by the Canadian Pacific, will get payment by the Canadian Pacific in cash of the guaranteed interest falling due on their bonds between January 1, 1938, and January 1, 1941. For the remainder of their total claims they will receive about 1.168 shares of new no-par common stock for each $100 of their claims.

Holders of the present first refunding mortgage series A six per cent bonds, maturing July 1, 1946, none of which bears the Canadian Pacific interest guaranty, will receive for each $100 of their total claims, including ac-

(*Continued on page 664*)

Protection at 38 Street Crossings In Rock Island, Ill.

Project, involving installation of gates, signals, and bells, on four railroads provides 24-hr. uniform crossing protection—Eleven crossings closed



Left—Cantilever Signal at 17th Street in Rock Island. Right—Typical Manual Control Machine at 5th Street in Moline

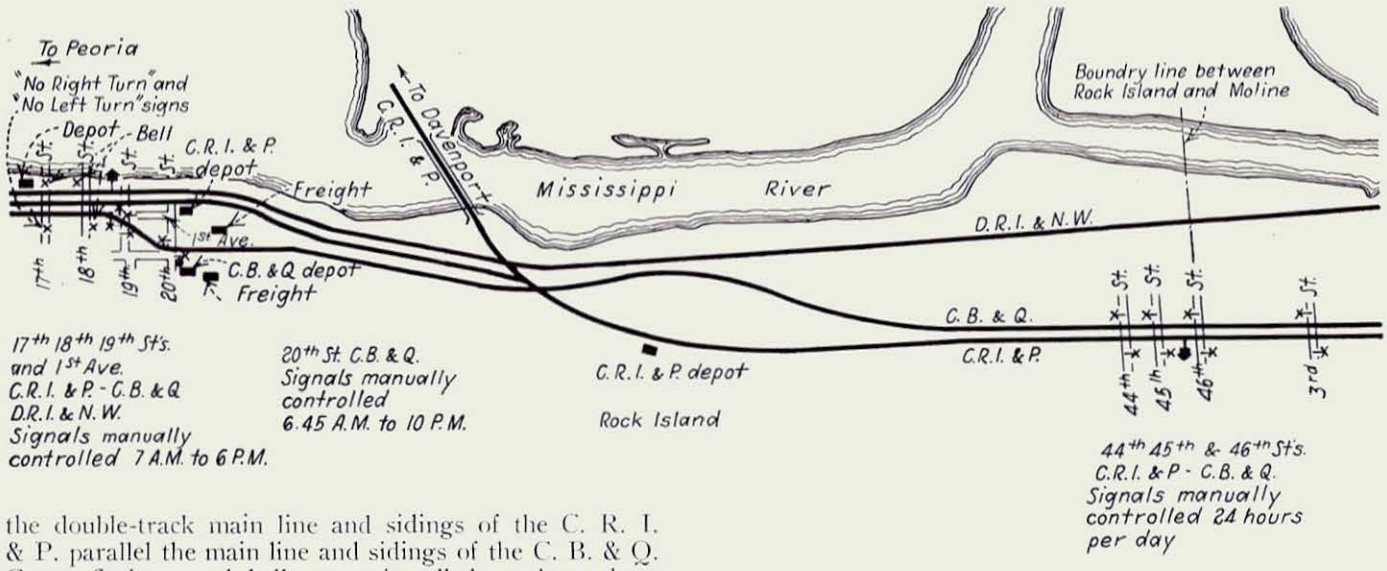
IN Rock Island, Ill., Moline, East Moline, Watertown and Carbon Cliff, the main streets of the business, industrial and Mississippi River waterfront district are crossed at grade by an extensive network of tracks of four railroads. In these areas, with the co-operation of municipal, state and federal authorities, the Chicago, Rock Island & Pacific; the Chicago, Burlington & Quincy; the Davenport, Rock Island & Northwestern, and the Chicago, Milwaukee, St. Paul & Pacific have established 24-hour protection at 38 street crossings throughout a distance of approximately 14 miles. An important phase of this extensive project was the closing of 11 crossings, the closing of 2 additional crossings to vehicular traffic, and the conversion of 1 crossing from a public to a private crossing. The crossings protected, as well as those closed, are listed in the accompanying table. The plan shows the track layout in Rock Island and in most all of Moline.

This improvement program involved the installation of flashing-light signals and bells at 10 crossings, and electric gates with flasher-light signals and bells at 28 crossings. In some instances "No Left Turn" or "No Right Turn" operative signs were installed in addition to the other protection. At 15 of the crossings, the control of the protection is straight automatic, at 7 crossings the control is automatic except during certain hours of the day when manual control is in effect, and at 16 crossings straight manual control is used 24 hours daily.

This new system replaces various forms of crossing protection, including flashers, bells, watchmen, mechanical or pneumatic gates, etc., while at some of the crossings no protection, other than fixed crossbuck signs, had been in service. At some of the crossings, flagmen were on duty for various periods ranging from 8 to 13 hours daily, while at other crossings flagmen were provided the full 24 hours of each day.

Because of the variations in main-line train speeds, and the stops at the railroad stations, as well as the complexity of the extensive switching movements, the use of track circuits was impracticable for the control of the crossing gates, signals and bells in the groups of these facilities between 44th and 46th Streets in Rock Island; between 3rd and 8th Streets, between 12th and 15th Streets, and between 16th and 20th Streets in Moline; and between 17th and 19th Streets, East Moline. Therefore, a system of straight manual control was devised, the crossings being divided into 5 groups, as heretofore mentioned, with the gates and signals in each group controlled by a panel-type machine in a small elevated cabin. Where auto-manual or semi-automatic gates, signals and bells are in service, as will be explained later, similar control panels are used during certain periods of each 24 hours.

Reference is made first to the west portion of the diagram. At 17th and 18th Streets in Rock Island, flashers, with bells, as well as operative "No Right Turn" and "No Left Turn" signs, were installed on the main line of the D. R. I. & N. W., and the industrial tracks of the C. R. I. & P. and the C. B. & Q. At 1st Avenue, 19th and 20th Streets, gates, flashers and bells were installed to protect crossings over two main tracks of the C. B. & Q. The control of this protection is semi-automatic in operation, while at 17th, 18th and 19th Streets and 1st Avenue the control is manual from a tower between 18th and 19th Streets during the hours between 7 a. m. and 6 p. m. The protection at the C. B. & Q. Crossing is manually controlled between 6:45 a. m. and 10:00 p. m. At 44th, 45th and 46th Streets,


To Peoria
"No Right Turn" and "No Left Turn" signs
Depot
Bell
C.R.I. & P. depot
Freight
1st Ave.
C.B. & Q. depot
Freight
17th
18th
19th
20th
To Davenport
C.R.I. & P.
Mississippi River
Boundry line between Rock Island and Moline
D.R.I. & N.W.
C.B. & Q.
C.R.I. & P.
44th
45th
46th
3rd
17th 18th 19th St's. and 1st Ave. C.R.I. & P. - C.B. & Q. D.R.I. & N.W. Signals manually controlled 7 A.M. to 6 P.M.
20th St. C.B. & Q. Signals manually controlled 6.45 A.M. to 10 P.M.
C.R.I. & P. depot
Rock Island
44th 45th & 46th St's. C.R.I. & P. - C.B. & Q. Signals manually controlled 24 hours per day

the double-track main line and sidings of the C. R. I. & P. parallel the main line and sidings of the C. B. & Q. Gates, flashers and bells were installed at these three crossings, and are manually controlled during the entire 24 hours from a tower on the south side of the C. R. I. & P. between 45th and 46th Streets.

Extending east, the main lines of the C. R. I. & P. and the C. B. & Q. enter Moline, the boundary being 46th street. Gates, flashers and bells were installed at 3rd, 5th, 6th, 8th, 12th, 14th, 15th, 16th, 17th, 19th and 20th streets. The facilities at the 3rd, 5th, 6th and 8th street crossings are controlled from a tower on the south side of the C. R. I. & P. tracks at 5th street. The protections at 12th, 14th and 15th street crossings, like the 3rd to 8th street facilities, are controlled manually 24 hours a day from a tower. "No Left Turn" signs are provided at the crossings at 14th, 15th, and 16th streets. The crossing protection group including 16th, 17th, 19th and 20th streets is manually controlled 24 hours a day from a tower on top of the C. R. I. & P. station platform roof. Straight automatic gates, flashers and bells were installed at 23rd, 34th and 41st streets. Cut-outs, operated by switch keys, were installed at the 23rd street crossing to cut out operation of the protection when switching moves are not destined to pass over the crossing in the immediate future.

The D. R. I. & N. W., the C. R. I. & P., and the C. B. & Q. have separate yard facilities between 25th and 34th streets, from which latter point single, double and single-track lines respectively extend eastward. A switch key cut-out for the control of the gates and signals was provided at 34th street. Straight automatic flashers and bells were installed at two crossings on the main line of the D. R. I. & N. W. and the industrial tracks of the C. B. & Q. at 20th street and 3rd avenue.

Crossings Closed

Rock Island

5th Ave. (CRI&P)
7th St. (CRI&P-CB&Q)
19th St. (CRI&P)

Note:
19th St. crossing is subject to temporary reopening.

Moline

1st St. (DRI&NW)
*2nd St. (CRI&P-CB&Q)
4th St. (CRI&P-CB&Q)
11th St. (CRI&P-CB&Q)
19th St. (DRI&NW-CB&Q)
22nd St. (CRI&P-CB&Q)
25th St. (CRI&P-CB&Q-DRI&NW)
38th St. (CRI&P-CB&Q-DRI&NW)
48th St. (CRI&P-CB&Q-DRI&NW)

East Moline

**5th St. (CRI&P-CB&Q-DRI&NW)
*11th St. (CRI&P)

* Closed to vehicular traffic only
** Converted to private crossings.

Automatic gates, bells and flashers were installed at 1st street, the boundary between Moline and East Moline, and at 3rd avenue; the C. R. I. & P., the C. B. & Q., and the D. R. I. & N. W. being involved. With the same three roads involved, semi-automatic gates and signals were provided at the 7th street crossing, and on the C R. I. & P. alone at 9th street. These signals and gates are controlled 12 hours a day from a tower north of the C. R. I. & P. tracks, between 7th and 8th streets. At 9th street, the C. R. I. & P. tracks, leading eastward to Chicago, separate from those of the C. B. & Q. and the D. R. I. & N. W., which extend in a northward direction and then divide, the C. B. & Q. extending to Barstow and the D. R. I. & N. W. joining with the C M. St. P. & P. at 10th Street, the line of the latter road extending northward to Savanna. At 10th street, where the D. R. I. & N. W. and the C. B. & Q. cross the highway, automatic flashers and bells were installed.

Crossings Protected

Rock Island

17th St. (CRI&P-CB&Q-DRI&NW)
18th St. (CRI&P-CB&Q-DRI&NW)
1st Ave. (CB&Q-DRI&NW)
19th St. (CB&Q)
20th St. (CB&Q)
44th St. (CRI&P-CB&Q)
45th St. (CRI&P-CB&Q)

Moline

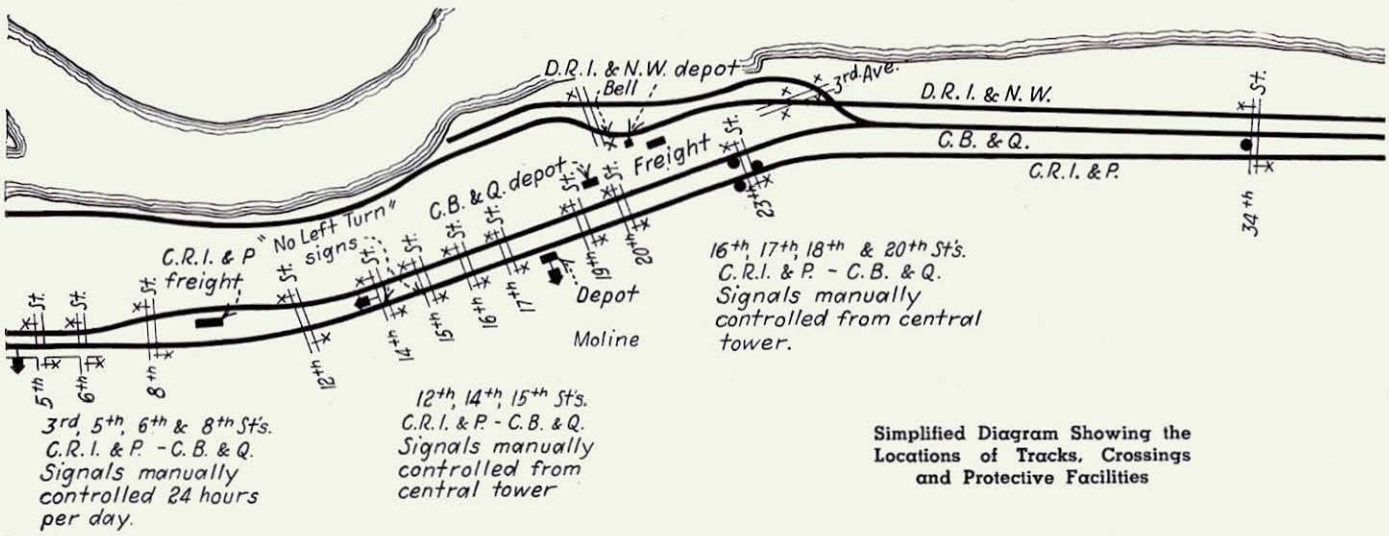
1st St. (CRI&P-CB&Q)
3rd St. (CRI&P-CB&Q)
5th St. (CRI&P-CB&Q)
6th St. (CRI&P-CB&Q)
8th St. (CRI&P-CB&Q)
12th St. (CRI&P-CB&Q)
14th St. (CRI&P-CB&Q)
15th St. (CRI&P-CB&Q)
16th St. (CRI&P-CB&Q)
17th St. (CRI&P-CB&Q)
19th St. (CRI&P-CB&Q)
20th St. (CRI&P-CB&Q)
20th St. (DRI&NW-CB&Q)
23rd St. (CRI&P-CB&Q)
3rd Ave. (CB&Q)
34th St. (CRI&P-CB&Q-DRI&NW)
41st St. (CRI&P-CB&Q-DRI&NW)

East Moline

1st St. (CRI&P-CB&Q-DRI&NW)
3rd St. (CRI&P-CB&Q-DRI&NW)
7th St. (CRI&P-CB&Q-DRI&NW-CMStP&P)
9th St. (CRI&P)
10th St. (CRI&P)
10th St. (DRI&NW-CB&Q-CRI&P-CMStP&P)
13th St. (CRI&P)
13th St. (CB&Q-DRI&NW)
17th St. (CRI&P)
17th St. (CB&Q)
19th St. (CRI&P)
19th St. (CMStP&P)

Carbon Cliff

1st Ave. (CRI&P)


D.R.I. & N.W. depot
Bell
3rd. Ave.
D.R.I. & N.W.
C.B. & Q.
C.R.I. & P.
Freight
C.B. & Q. depot
C.R.I. & P. freight
"No Left Turn" signs
Depot
Moline
3rd, 5th, 6th & 8th St's.
C.R.I. & P. - C.B. & Q.
Signals manually controlled 24 hours per day.
12th, 14th, 15th St's.
C.R.I. & P. - C.B. & Q.
Signals manually controlled from central tower
16th, 17th, 18th & 20th St's.
C.R.I. & P. - C.B. & Q.
Signals manually controlled from central tower.

Simplified Diagram Showing the Locations of Tracks, Crossings and Protective Facilities

Automatic gates were installed at the 10th and 13th street crossings on the C. R. I. & P. At the 13th and 17th street crossings on the C. B. & Q., automatic flashing-light signals with bells were installed. Straight manually-controlled gates were installed at the 17th and 19th street crossings on the C. R. I. & P., and are controlled 24 hours a day from a tower on the south side of the tracks at 19th street.

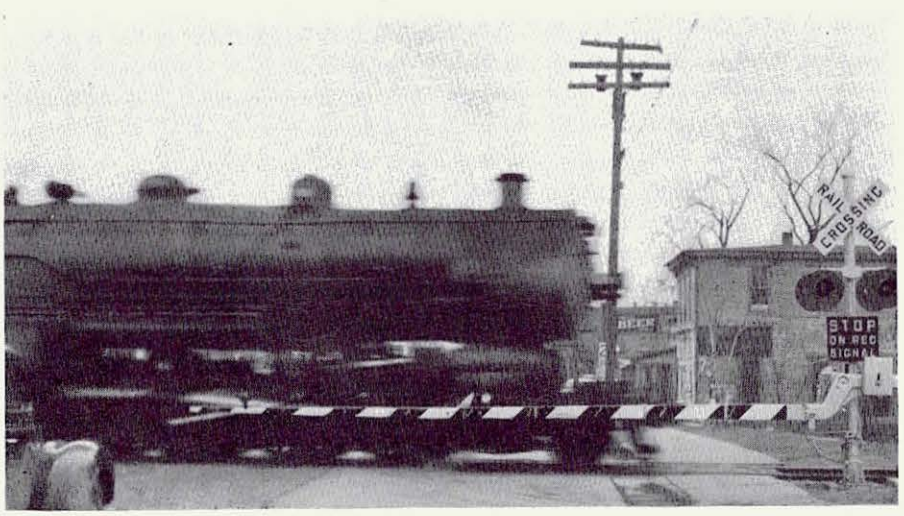
At Watertown, 2 miles north of East Moline, automatic flashing signals were installed at the C. M. St. P. & P. crossing with 19th street. At Carbon Cliff, 3.5 miles east of East Moline, flashing signals and bells were provided at a crossing of 1st avenue on the C. R. I. & P.

The control panels for the straight manual and automanual or semi-automatic crossing protection facilities were designed and manufactured by the Western Railroad Supply Company. Each panel is inclined, and is made of laminated bakelite, mounted on a sheet-iron cabinet. A track diagram, across the top, includes yellow and white track-occupancy lamps, the two colors being used to distinguish certain tracks from others. Below the diagram is a set of levers, each of which is in line vertically with the respective facilities it controls, as represented on the diagram of the machine. These are two-position levers, up and down, normally in the up position. Above each lever, a red lamp is normally dark as long as the respective controlled gate is up. When any gate is in the down position, the red lamp directly above the respective lever is illuminated. At certain manually-controlled-gate locations, where the view of the crossing is obstructed, a red lamp is provided on the diagram, representing that location and all of the tracks. If a locomotive or car is standing on the crossing, the respective red lamp will be illuminated. Also located on the panel, are annunciator cut-out and gate-forestalling buttons.

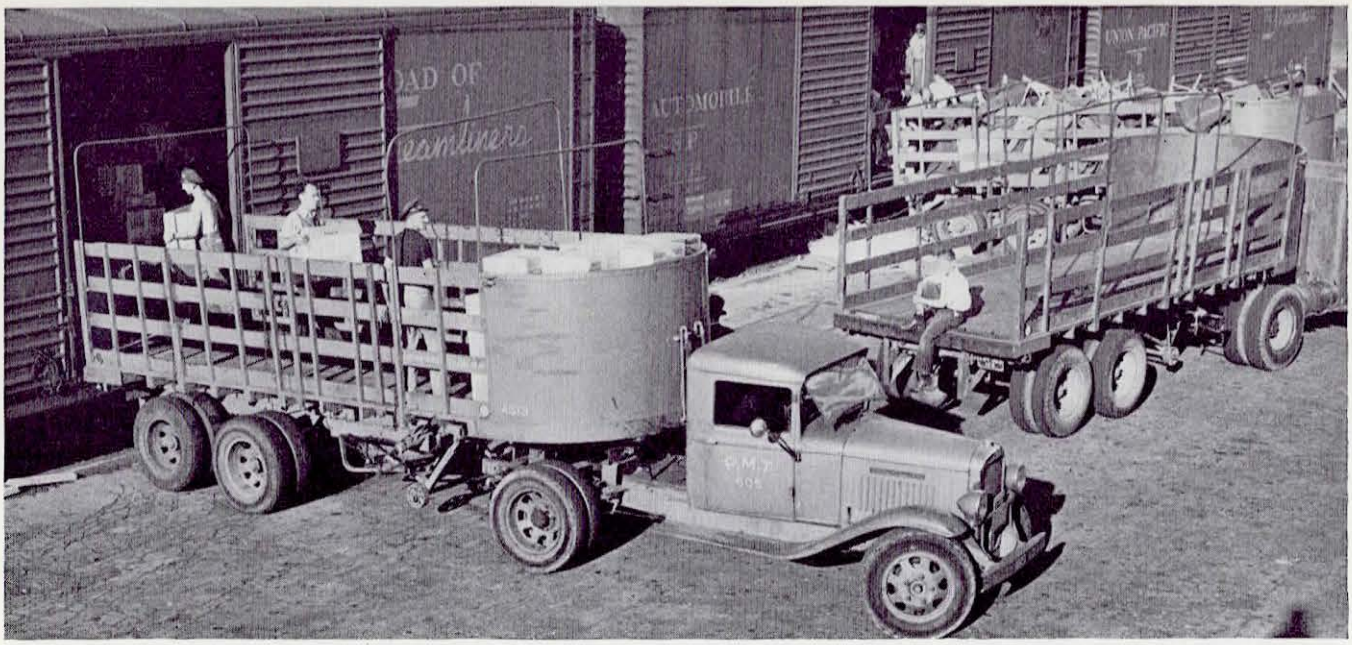
Gates and Signals

The gates are of the short-arm type with arms ranging from 16 ft. to 34 ft. in length, which is adequate to reach across the right-hand lane of traffic approaching the crossing. In all cases, the gate arms extend to the center line of the highway paving. One gate and signal mast is used at the right-hand side of the pavement for each of the approaches to the crossings, and no gate obstructs the lanes of traffic departing from the crossing, so that vehicles are free to move off the crossing.

On each gate mast, the equipment includes, from top to bottom, a bell, a reflectorized "Railroad Crossing" crossbuck sign, a reflectorized number-of-track sign, the flashing-light units, equipped with 8⅜-in. spread-light roundels, and the gate mechanism, which is the Type 3564, employing a 10-volt d.-c. motor, the complete assembly of which is known as the Model-10 of the Western Railroad Supply Company. This project was planned and installed by the railroads involved, the signal forces of each road handling the office work and construction for the crossings on its road.



Typical Crossing with a Short-arm Gate in the Lower-position Across Lane Approaching the Main Tracks



The S. P. Saves Cars Through Rail-Highway Co-Ordination

The Supplemental Use of Highway Trucks*

How the Southern Pacific has built up a vast system of co-ordinated service

By L. B. Young

Vice-President, Pacific Motor Truck Company

AMONG the first railways to begin storedoor service were the Southern Pacific and affiliated lines. Starting in 1929, this service now includes practically every station on the S. P. and is successful in holding l. c. l. traffic on the railroad. The Southern Pacific was also among the first to offer rail-highway co-ordinated service for movements of intercity freight. When confronted with the desirability of providing such service, there were two primary courses open to them; either they could secure the necessary franchises and operate for long distances over the highway just as the truckers were doing, or they could improve their own train schedules. The Southern Pacific adopted a combination of the two.

The first step in their program was a revolutionary one; they started putting baggage cars full of merchandise on passenger trains. An example of this is their use of passenger train No. 55 which leaves Los Angeles at 8:25 p. m. and reaches Fresno at 7 a. m. Obviously this train could not stop at all of the intermediate stations and set out cars, or unload way freight, and still be a fast train. It was, however, able to give first morning delivery to Fresno where second morning was the best a freight train could do. It also was able to set out cars of merchandise at Bakersfield and Tulare. But this alone provided no improvement for the small intermediate stations at which the train did not stop, or for the numerous branch line stations throughout the San Joaquin Valley through which the train did not pass at all.

To make the improved service complete to every station in the territory, both main and branch line, the Pacific Motor Truck Company established truck routes to operate as supplements to and in co-ordination with the train, with Bakersfield, Tulare and Fresno as the co-ordination points. Merchandise for neighboring stations was loaded into cars which were set out in the early morning at these three cities, where the traffic immediately was transferred to P. M. T. trucks for the completion of the haul to final destination that same morning. Nine such truck routes radiate from Fresno; to the north toward Merced and Los Banos; to the east and southeast toward Sanger, Fowler and Reedley; to the west toward Kerman; and to the south and southwest toward Hanford, Lemoore and Coalinga.

Similar routes are operated from Tulare, serving branch line points in the Visalia and Porterville districts and intermediate mainline points southward toward

* Abstracted from an address delivered before the Pacific Railway Club in Los Angeles.

Famosa. From Bakersfield, trucks serve the important oil field districts situated in the branch line territory both east and west of the main line.

This co-ordination in the San Joaquin Valley is typical of numerous others by which practically the entire Pacific Lines of the Southern Pacific are being served. Merchandise from San Francisco and Sacramento is moving into the San Joaquin Valley on fast trains for connection with the same trucks that supplement Train No. 55 from Los Angeles. Merchandise for Nevada is moved from San Francisco to Reno on a passenger train which at Reno is supplemented by P. M. T. trucks. Other passenger trains similarly serve the Sacramento Valley, Northern California and Southern Oregon, with P. M. T. trucks completing the haul from various co-ordination points to the numerous intermediate and branch line stations. While the use of passenger trains was indispensable to the production of improved service to the more distant territories, the use of passenger trains is not always necessary in the districts within 200 miles of the principal marketing centers. Within that general area the supplemental use of distribution trucks in conjunction with ordinary freight trains is equally effective.

Extent of Service

Throughout the Pacific Lines of the Southern Pacific, the P. M. T. is operating out of a total of 62 co-ordination points in this manner. It is using in its service a total of 746 automotive units. It is operating an average of 13½ million vehicle miles and is carrying an average of more than three-quarters of a million tons of merchandise a year. It owns and operates approximately 6,600 miles of highway franchises in California, Oregon, Nevada and Arizona and it is interesting to note that the total main and branch line mileage of the Southern Pacific in the four states is 7,450, or only 850 miles more than the truck mileage. New highway operations are about to be added which will just about equalize the two.

The Southern Pacific, through the Pacific Motor Truck Company, is not hauling large volumes of freight for great distances over the highways in competition with its rail lines. Generally speaking, it is both unnecessary and uneconomical for a railroad to engage in such operations, and the S. P. handles its l. c. l. traffic in large lots and for the longer distances by train. The supplemental service of the P. M. T. trucks is used only for the completion of the haul to destinations at which satisfactory train service cannot reasonably be given. With all of its trucks and all of its mileage, the average length of haul by P. M. T. is only slightly over 50 miles. Moreover, the cost of operating the truck service does not represent an added expense to the railroad. Almost without exception, distribution by truck has permitted the railroad to effect savings in locomotive fuel, train miles, car miles, and penalty overtime to local freight train crews, which in the aggregate more than offset the cost of operating the trucks. In effect, therefore, the superior service produced by the supplementary trucks is actually costing the railroad less than the inferior service which the trains alone were able to supply.

On the Southern Pacific, an outstanding example of the success of fast schedules is to be found in the development of the service between Los Angeles and San Francisco. Conventional freight train service between the two points originally was no better than second morning. With the development of fast trucks and good roads the highway truckers offered first morning delivery with the result that a substantial part of the merchandise traffic was diverted to the highway service. Initially the Southern Pacific met the new demand for first morning delivery by using baggage cars in a passenger train, just as it does in other territories.

When this service was started from San Francisco to Los Angeles, only two baggage cars were needed and the traffic totaled about 18 tons a day. The success of the new schedule was immediate and the increase in traffic was phenomenal. Shortly, the number of cars needed exceeded the capacity of the passenger train. The result was the establishment of the Southern Pacific's "Coast Merchandise," which is a train of special box car equipment devoted exclusively to the handling of less-than-carload freight. From the 2 cars and 18 tons initially moved on the passenger train, the "Coast Merchandise" is now handling between 35 and 40 cars with an average of about 430 tons a day and this is in one direction only. "Coast Merchandise" cars are equipped with steel wheels and passenger train braking equipment for high speed operation. Its schedule from San Francisco to Los Angeles is 12 hr. 20 min. The significance of this schedule may better be realized when it is compared with the running time of the Lark, the Southern Pacific's crack passenger train between the same points, which operates on a schedule of 12 hr., or only 20 min. faster than the merchandise train.

A similar train, devoted exclusively to merchandise traffic, operates between Los Angeles and Arizona points. This train, originated several years ago, started out with about 5 cars a day. It is now running with between 20 and 30 cars and its schedule from Los Angeles to Phoenix is 10 hr. 55 min. which is only 10 min. slower than the Golden State Limited.

Thus, through the combination of storedoor delivery, fast merchandise trains, and the supplemental use of highway trucks for distribution service, there is hardly a city or town or village on the lines of the Southern Pacific that isn't afforded first day delivery of merchandise from the marketing centers with which they normally do business.

Feeder Service

There is another and equally important use that the Southern Pacific is making of its P. M. T. truck operations, in extending the service of the S. P. into the back country for the purpose of feeding to the railroad traffic which otherwise would move entirely by other modes of transportation. An example of this is the extension of service into Lake county in Northern California, which is the only county in California that is not served by a railroad. It lies in a valley entirely surrounded by mountains, and produces a substantial crop of fine pears each year. In the absence of railroad operations directly into the producing area, these pears in the past have moved from the orchards and packing houses through to consuming points by truck. In some cases they have moved by highway truck into the ports and then East by water. Four years ago, the P. M. T. extended truck service, from a connection with Northwestern Pacific trains at Ukiah and at Santa Rosa, over the mountain into the Lake county growing territory. With P. M. T. trucks moving the crop out to rail connections, a consistently increasing proportion of the total production is moving east over the rail lines.

Another example is found in the construction of the huge aqueduct of the Metropolitan Water District which carries the water from Parker Dam on the Colorado river to Los Angeles. The cement for this construction was produced at mills in the Los Angeles area. Since the point of consumption was quite remote from the

lines of any railroad, there was every likelihood that the cement would move through from mills to point of consumtpion by highway trucks. To forestall this competition, however, the Southern Pacific offered to perform the complete transportation job and thus held the business to the rail lines. The cement was moved in bulk in box cars to the several stations in the Coachella Valley nearest the points of consumption. At these stations, through the use of rather elaborate handling facilities, the P. M. T. transferred the cement from rail cars to trucks and completed the haul to the job. In this single project the P. M. T. moved a total of 535,000 tons of cement. At the peak of the operation as many as 26 carloads a day were hauled to consumption points as much as 55 miles back in the hills from the railroad.

A similar and equally spectacular co-ordination is the extension of Southern Pacific's service, through its P. M. T. operations, into the Sierra Nevada mountain a distance of 28 miles from the end of the railroad at Laws, and to an elevation of nearly 9,000 feet for the purpose of serving the concentration mill of the U. S. Vanadium Company. This is a newly constructed plant which produces vanadium and other concentrates used in the hardening of steel for the manufacture of armament. Traffic for this plant is moved by the S. P. to one of its rail stations in the Owens Valley where it is transferred to P. M. T. trucks for the completion of the haul to the mill. The last 10 miles of this haul is over a one way road with grades as steep as 16 per cent and the final 1,000-ft. climb is made within a distance of 2.8 miles. During the winter months the trucks are fighting snow for the entire distance. In the summer months they leave the 110 deg. heat of the Owens Valley and, by the time they reach the mill 10 miles away, they are operating through snowbanks. On the return trip the trucks bring out the concentrates for loading in cars for movement by rail to destination. Without this extension of service, the likelihood of both the inbound and outbound traffic moving by other methods of transportation was by no means remote.

Handling Head-End Traffic

A more recent and equally valuable function of supplementary highway trucks has been their use to relieve passenger trains. Many passenger trains operate on slow schedules or fail to maintain their published schedules because of the many stops they are obliged to make at small intermediate stations at which no passengers are handled, for the sole purpose of receiving and discharging mail and express. Substitution of motor trucks paralleling such trains in densely settled territories is invaluable in getting them over the road on time. There is an outstanding example of this between Portland, Ore., and Eugene. Through the substitution of a supplementary truck to handle the mail and express in this territory the schedule of one of the Southern Pacific's passenger trains was reduced 50 min. in a distance of only 125 miles.

The trucks of the P. M. T. have been widely used to carry on service in the emergencies occasioned by fires, floods, slides and other calamities to which railroads generally are susceptible. An example is found in the recent destruction by fire of the Pacific Electric bridge at Whittier. For ten days during reconstruction, P. M. T. trucks hauled mail, express, l. c. l. freight and train crews around the gap so that essential service was continued without interruption.

The Southern Pacific is just recovering from the severe floods which washed out the Clifton branch in Arizona and upon which service was maintained by truck for several days during repairs. During the winter before last, the Eel river washed out a Northwestern Pacific trestle at one point, and a mountain slid over the tracks at another point. For nearly a month, while trying to get the river and the moving mountain under control, P. M. T. trucks carried the traffic, and for a time these were the only trucks permitted in the danger zone. While the mountain was moving we were obliged to convoy the vehicles through behind a bulldozer. The bulldozer went ahead to scrape a patch through the moving mud which closed immediately in behind the trucks, again blocking the highway. Obviously the motor truck has become indispensable to complete transportation.

The railroads today are not, as may be commonly supposed, fighting the motor trucks. Instead, they are using them. They are not merely in the railroad business. They are in the transportation business and whatever new transportation machinery may be developed, the progressive roads stand ready to adapt it to their operations to the end that they may be complete.

Government Takes Over T. P. & W.

ON March 21, President Roosevelt ordered the Office of Defense Transportation to take over the Toledo, Peoria & Western on behalf of the government. Director Eastman immediately sent members of his staff, headed by J. W. Barriger, associate director, O. D. T., to Peoria to carry out the President's order.

Mr. Barriger arrived on March 22 and immediately began arrangements to take over the railway. He was accompanied by Otto S. Beyer, director of the division of personnel; Hallan Huffman, assistant general counsel; George Voelkner of the division of railway transport and a staff of valuation and accounting representatives of the O. D. T. William Hough of the Chicago office of the Interstate Commerce Commission and two army officers, Colonel Harold T. Weber and Major Norman H. Davis, Jr., also accompanied the group.

President George P. McNear, Jr., of the T. P. & W. was temporarily deposed as operating head of the railway and Mr. Barriger took over as federal manager. The striking employees were ordered to return to work and agreed to do so as of 12:01 a.m. on March 25, thus terminating a strike that lasted nearly three months and was marked by much bitterness on both sides. On Tuesday, when a peaceful settlement was assured, Mr. Beyer, the personnel representative of the O. D. T., and the two army officers left Peoria and returned to their respective headquarters.

In taking over the railway, the staff from the O. D. T. will concern itself entirely with the operation of the line. Mr. Barriger states that the period of Federal control will be made as brief as possible. The railroad will be operated under the working rules in effect prior to December 28, when the strike took place. Meanwhile, negotiations as to the final working rules to be effective on the T. P. & W. are being conducted by the War Labor Board, entirely independent of the Federal Manager and his staff, who will be concerned entirely with operating the railway and will take no part in the labor proceedings.

The former supervisory staff will be asked to continue in their positions, subject to the discretion of the Federal Manager. The returning strikers will be given the place on the seniority board which they occupied as of

December 28, and new men hired since that time will be put on the lists in accordance with the few months' seniority they have attained since the strike began.

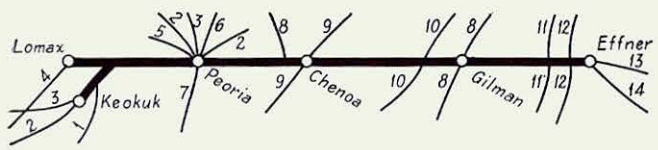
Conflicting Viewpoints

The taking over of the T. P. & W. marks the first time since World War I that the government has taken over a railway. The President's order explained the action as follows:

"The National War Labor Board, by order dated February 27, 1942, directed that the dispute be submitted to arbitration under Section 8 of the Railway Labor Act, and the representatives of the employees have agreed thereto, but the Company has refused and continues to refuse to submit the dispute to arbitration, despite urgent requests by the National War Labor Board and the President that it do so."

In his letter to the President on March 19, Mr. McNear explained his position, in part, as follows:

"Our controversy with the railroad brotherhoods was confined solely to the matter of the rules and working



The T. P. & W. Serves as a Connection Between Many Eastern and Western Lines as follows: (1) Wabash; (2) C. B. & Q.; (3) C. R. I. & P.; (4) A. T. & S. F.; (5) M. & St. L.; (6) C. & N. W.; (7) P. & P. U.; (8) I. C.; (9) Alton; (10) Wabash; (11) C. & E. I.; (12) C. M. St. P. & P.; (13) Penna.; (14) C. C. C. & St. L.

conditions of the employees who operate the trains. The so-called "standard" rules which the brotherhoods were endeavoring to impose upon us are aptly and generally referred to as the "featherbed rules." We were willing to discuss any rates of pay which the brotherhoods might suggest, but the brotherhood officials refused to state any rates at which they would let their men work under the rules and working conditions which we proposed and which provided for a fair day's work for a fair day's pay.

"Following the precipitate calling of the strike for December 9, 1941, and until the time it actually became effective on the evening of December 28th, we repeatedly urged the Mediation Board to recommend to you the appointment of an Emergency Board to investigate and report on our controversy about the rules and working conditions. But the Mediation Board consistently disregarded our requests. The strike finally became effective December 28th without any action having been taken by the Mediation Board to request an Emergency Board.

"The fairness and impartiality of the Mediation Board become most vital factors in considering arbitration under the Railway Labor Act. Unfortunately, various events which have taken place from time to time have not inspired us with confidence as to the fairness and impartiality of the Mediation Board. The Mediation Board could have avoided this entire strike, if it had recommended that you appoint an Emergency Board under the clear and specific provisions of the Railway Labor Act intended to cover just such situations. But it was apparent that the brotherhoods did not want the public hearings which would be an essential part of an investigation by an Emergency Board inquiring into our situation; and that they did not want a public airing of the wasteful effects of their featherbed rules, spelled out in language that anyone could understand, or the widespread public criticism they know would result from such exposure.

"These brotherhoods well knew that the one sure and complete way to expose the whole mess to the public view, not only the featherbed rules they were trying to impose upon our railroad, but the wastes and extravagances they cause to the railroad industry as a whole, was through the appointment of an Emergency Board in our two cases then pending before the Mediation Board. They also knew that the facts which would have been presented at such public hearings and the published report of such board would have brought an end to their unreasonable demands upon us and the beginning of essential adjustments on the railroads generally."

Working Rules Cause Dispute

A complete chronology of the strike and the complicated legal tangles involved appeared in the March 21, 1942, issue of the *Railway Age*, page 580. Mr. McNear's fight to prevent arbitration except on his own terms has somewhat obscured the original issues. In 1929, there was a strike on the part of train and enginemen on the T. P. & W., which was won by Mr. McNear, and among the employees who struck last December were many who aided in breaking the strike of 1929. In the summer of 1941, the brotherhoods were successful in organizing these men, and the National Mediation Board certified various brotherhoods as being official representatives of the employees. Shortly thereafter, the brotherhoods asked for a "modernization" of the working rules. It is the contention of the men that standard working rules must govern on the T. P. & W. They cite certain statements made in the report of the Emergency Board that investigated the wage hearings of last year, which, in effect, declared a truce between railway managements and men insofar as operating rules are concerned.

Since the strike, President McNear has taken the position that the approximately 100 men who walked out are no longer employees of the Company and, while he has expressed a willingness to arbitrate in the manner he believes to be legal, the issue of standard rules has been held in abeyance while the technicalities of arbitration were under consideration. Previous to the strike, Mr. McNear insisted that his railway had not committed itself in any way as to rules and pointed out that the actions of the Western Carriers Conference Committee in the wage negotiations were not binding on the T. P. & W., as the committee did not represent his railway and was not empowered to act, either jointly or individually, for the T. P. & W. He stated further that, in time of war, the railway should not be forced to employ 84 men to do the work previously handled by 52 employees.

The views of the two sides were thus diametrically opposed from the beginning and it was early apparent that no compromise was likely as both the management and the brotherhoods stubbornly maintained their respective positions, despite pressure from many sources. It was then that President Roosevelt interposed, although the seizure of the railway was qualified as follows in the order:

"Possession and operation hereunder shall be continued only until the President determines that such temporary possession and operation are no longer required for successful prosecution of the war."

Pullman Incorporated

THE annual report of Pullman Incorporated for 1941 shows consolidated net income of $10,918,820, or $3.31 per share, as compared with $7,484,125, or $1.93 per share, in 1940. This included net operating income of $1,732,949 earned on $70,174,056 of gross operating revenue in the sleeping and parlor car business, a net manufacturing profit of $9,257,848 earned on $105,428,055 of sales, and a net loss of $71,976 from investment operations. Total taxes of $10,973,525 paid or accrued by the Pullman group of companies in 1941 were the heaviest on record and absorbed half of the consolidated net income before such taxes.

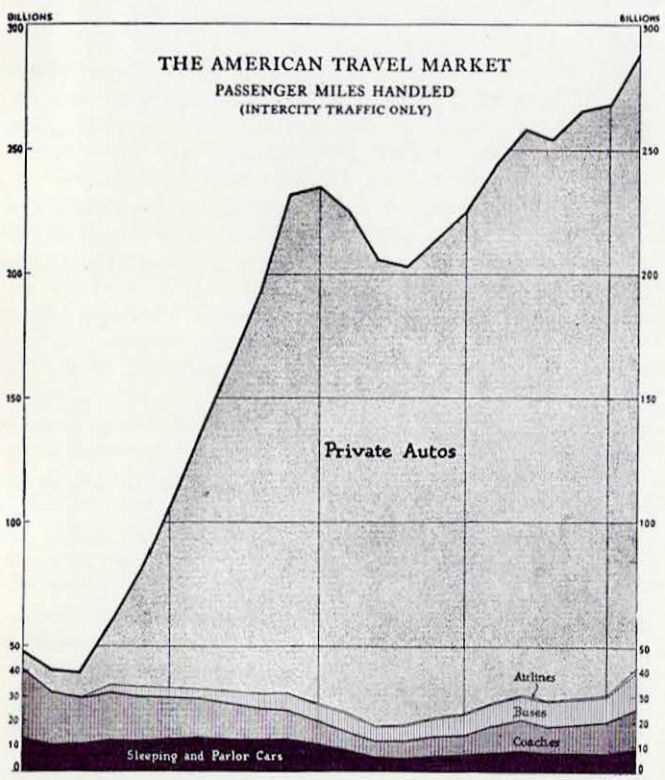
Net working capital of $75,489,406 as of December 31, 1941, was close to the record high total of $75,875,858 reported a year ago. Cash and United States Government securities, exclusive of those held in reserve funds, amounted to $31,484,773 at the end of 1941. Current assets of $105,377,876 on December 31, 1941, were 3.53 times current liabilities.

Total inventories at the close of 1941 show an increase of $23,764,794 over those carried at the previous year-end, resulting primarily from the record high level of operations in the manufacturing business where there was an interim increase of about $152,000,000 in unfilled orders, yielding a 6.65 ratio of unfilled orders to inventories at December 31, 1941.

In the report to stockholders, David A. Crawford, president, said, "Car operations in 1941 were characterized by the largest traffic volume since 1930, sharply expanding operating costs, diminishing the spread between income and outgo, and the smallest margin of profit since 1938. The major part of the 1941 increase in traffic volume reflects the expansion of troop transfers and other government travel generated by the defense program, which has continued at a rapidly accelerating pace during the opening months of 1942 as the result of the year-end transition to a war economy. The volume of regular commercial and tourist travel—the profit-producing end of the business—scored a small gain for 1941 as a whole but the war has cut deeply into the tourist business, causing widespread cancellation of winter vacation plans.

"With supplies of new automobiles and tires cut off, and wartime regulations already imposed upon certain forms of scheduled passenger service, the nation's travel economy has entered a period of marked transition. The trend is clearly toward restriction of civilian travel that is not necessary to the prosecution of the war, and while normal railroad and Pullman passenger service has thus far been well maintained, there is no assurance that partial curtailments will not become necessary from time to time in order to clear the tracks for troop trains or emergency freight traffic. A study of the American travel market, as measured by the volume of business, passenger miles, handled by the intercity transport agencies, indicates that the scheduled passenger-carrying agencies would be unable to accommodate more than a very small fraction of the present volume of automobile travel. For example, 2 per cent of the 1941 volume of intercity automobile travel, added to the sleeping and parlor car traffic for that year, would have increased the latter to the highest level on record. The possibilities for great expansion in rail-Pullman traffic volume inherent in a situation of this kind are evident. However, it cannot be taken for granted that travelers forced to abandon certain agencies will be able to utilize other transportation facilities, or that such other facilities will be available for unrestricted civilian use.

"The carrier subsidiary has sold to the railroads, for rebuilding into emergency coach equipment for transporting troops and munition workers, practically all of the inventory of parlor cars no longer required in the Pullman business. A considerable number of sleeping cars that have been retired from the active list in recent years, but not actually scrapped, have been reconditioned and, along with additional sleeping cars drawn from the active list, have been assigned to a special fleet number-



Year	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941†	*Year*
	BILLIONS OF PASSENGER MILES																						
S & P Cars	13.3	10.5	10.9	12.3	12.1	13.0	13.5	13.0	12.8	13.0	11.3	8.8	5.9	5.3	6.1	6.5	7.6	8.1	7.4	7.5	7.3	9.1	S & P Cars
Coaches	27.5	21.0	18.5	19.3	17.6	16.4	15.4	14.0	12.2	11.2	8.8	7.1	6.1	6.8	7.8	7.9	10.7	12.4	10.2	11.1	12.5	16.2	Coaches
Buses	*	*	*	3.0	4.0	4.0	4.0	5.0	6.0	7.0	7.0	7.0	6.0	6.0	7.4	8.3	8.7	9.5	10.1	11.2	11.6	14.6	Buses
Airlines	*	*	*	*	*	*	*	*	*	*	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.7	1.0	1.4	Airlines
Total (A)	40.8	31.5	29.4	34.6	33.7	33.4	32.9	32.0	31.0	31.2	27.2	23.0	18.1	18.3	21.5	23.0	27.4	30.4	28.2	30.5	32.4	41.3	Total (A)
Private Autos	7	9	10	25	47	72	102	131	162	201	208	202	188	185	193	202	217	228	226	235	236	248	Private Autos
Total (B)	47.8	40.5	39.4	59.6	80.7	105.4	134.9	163.0	193.0	232.2	235.2	225.0	206.1	203.3	214.5	225.0	244.4	258.4	254.2	265.5	268.4	289.3	Total (B)

*Data not available (A) Excluding private autos (B) Including private autos †Preliminary

SOURCES: *Railroad Sleeping and Parlor Car and Coach (excluding commutation) Passenger Miles*—as reported by Bureau of Statistics, Interstate Commerce Commission.
Intercity Bus Passenger Miles (estimated)—for years 1923-1933 as reported in Passenger Traffic Report of Federal Coordinator of Transportation; for years 1934-1936 estimated on basis of concurrent percentage variation in total operating revenue reported by Greyhound bus system; for years 1937-1941 estimated by dividing total revenues of intercity motor carriers of passengers (as estimated by "BUS TRANSPORTATION" magazine) by assumed average bus fare of 1.5c per passenger mile.
Airline Passenger Miles—as reported by Civil Aeronautics Administration.
Private Automobile Passenger Miles (estimated)—for years 1920-1933 as reported in Passenger Traffic Report of Federal Coordinator of Transportation; for years 1934-1941, estimated by adjusting the Coordinator's 1933 estimate in accordance with changes in registrations (no allowance for possible change in intercity mileage per vehicle).

Traffic and Operating Statistics

COMPARATIVE STATEMENT FOR YEARS ENDED DECEMBER 31

Item	1937	1938	1939	1940	1941
Cars Owned	7,763	7,578	7,052	6,901	7,048
Cars Operated	5,500	5,124	5,100	4,990	5,303
Car Miles	872,598,392	818,481,116	825,745,133	820,386,700	878,057,274
Revenue Passengers:					
Berth	12,849,076	11,338,471	11,549,947	11,077,546	13,166,554
Seat	4,895,492	4,201,378	4,105,188	3,687,770	3,744,167
Total	17,744,568	15,539,849	15,655,135	14,765,316	16,910,721
Revenue Passenger Miles	9,170,428,451	8,269,882,057	8,485,399,123	8,213,878,992	10,070,406,876
Operating Revenue*	$64,287,199	$58,924,968	$60,664,266	$60,143,649	$67,040,587
Average per Car	$11,688.58	$11,499.80	$11,894.95	$12,052.84	$12,642.01
Expenses†	$59,875,601	$57,558,097	$58,573,975	$57,899,790	$65,307,638
Average per Car	$10,886.47	$11,233.04	$11,485.09	$11,603.16	$12,315.23
Net Operating Income‡	$4,411,598	$1,366,871	$2,090,291	$2,243,859	$1,732,949
Traffic Averages:					
Average Operating Revenue per Passenger	$3.62	$3.79	$3.88	$4.07	$3.96
Average Net Operating Income per Passenger	$0.25	$0.09	$0.13	$0.15	$0.10
Average Net Operating Income per Car per Day	$2.20	$0.73	$1.12	$1.23	$0.90
Average Mileage per Car Operated	158,648	159,722	161,914	164,396	165,577
Average Journey per Passenger (Miles)	517	532	542	556	596
Average Miles per Car per Day	435	438	444	449	454
Average Loading per Car (Passengers)	10.51	10.10	10.28	10.01	11.47

* From all sources after deducting Contract Revenue Payments to Railroads.
† Including allocated portion of Federal Income Taxes.
‡ After provision for Federal Taxes.

ing about 1,500 cars used exclusively in troop transportation.

"The remainder of the Pullman fleet of sleeping cars, consisting now of about 450 of the new-type lightweight cars and about 4,600 standard-type, heavyweight cars, has been sufficient thus far to take care adequately of the increased volume of travel now being handled in regular Pullman service and has also been sufficient, in the peak periods of troop movement, to permit the drawing off of as many as 1,400 additional cars for use in troop transportation, without necessitating the cancellation of any of the regular sleeping car services on account of a shortage of Pullman equipment, and only at coincident peaks of holiday travel and troop movement has there been any interference with the supply of Pullman equipment to meet the demand for extra sleeping cars.

"With wartime expansion of industrial activity lifting freight traffic volume (ton-miles) to the highest level on record in this country, the railroads ordered more new freight cars in 1941 than in any previous year since 1924—with the exception of 1929. Nearly four-fifths of the 85,000 cars placed with commercial builders were ordered during the first half-year. When it became apparent that shortages of material and labor difficulties throughout the industry were seriously retarding deliveries against the large accumulation of unfilled orders, the flow of new car purchases practically dried up during the second half-year and has since registered only partial recovery. However, with government aid in securing carbuilding materials, some progress is now being made toward running off the large backlog of orders carried over from 1941, which should clear the way for a revival of equipment buying in anticipation of further traffic gains.

"The number of passenger cars ordered by the railroads in 1941 was slightly larger than in 1940, but less than one-fourth the average annual purchases of such equipment prior to the depression. Construction is proceeding slowly on passenger cars ordered in 1941 by the railroads and the Pullman Company, for which considerable material had been accumulated, and in part fabricated, prior to interference with the completion of these cars by wartime allocations of certain materials for which acceptable substitute materials are not yet available. It now seems probable that with the rising demand of the government for passenger train cars of every kind for troop transportation, materials to complete the cars already under way will be allotted, and that materials also will be allotted for proposed large government purchases of cars built especially for troop transport.

"In the three-month period since war was declared, contracts or commitments for the production of armament taken by the manufacturing subsidiary have nearly quadrupled, amounting to approximately $269,000,000 as of March 1, 1942, and overshadowing the present rail equipment backlog of $67,000,000. The manufacture of armament has clearly become, for the present at least, the major element of this business.

"The recent expansion of orders for both railway equipment and armament has necessitated the reopening of some of the manufacturing company's idle freight car plants, and the conversion of others into facilities for armament production. In several plants facilities have been installed and are in active production on a wide range of armament work. Large additions to these installations are now under way, and a plant for construction of vessels for the U. S. Navy is to be erected in connection with the fabricating facilities at one of the plants. Several of the smaller unused plants have been taken over by government departments for storage purposes or for work being done for those departments by other contractors."

Railway Purchases Expanded To Meet War Needs

(*Continued from page 649*)

roads may obtain from manufacturers, the railroads have attributed the fairly uniform flow of materials up to the present largely to the effectiveness with which they anticipated their requirements prior to the imposition of the more rigid controls over critical materials by the government and recognize the possibility of some reduction in the volume of deliveries this year, even with the better appreciation of the importance of the railroads in the war program and the recent arrangements made in Washington to facilitate deliveries of railway materials through the medium of higher priority ratings.

Details of the purchases made by the railroads in 1941 and previous years are given in tables and will be supplemented by details of inventories and consumption in an early issue. For further comparisons of purchases, reference is made to the analysis of 1940 railway buying in the *Railway Age* of March 22, 1941.

I. C. C. Wipes Out Soo Line Equities

(*Continued from page 654*)

crued and unpaid interest as of January 1, 1941, about 0.195 share of new no-par common stock.

Canadian Pacific to Pay Interest

The final plan also provides that the holders of the present first refunding mortgage series B 5½ per cent bonds, maturing July 1, 1978, all of which bear the Canadian Pacific interest guaranty, will get cash payment from the Canadian Pacific of their guaranteed interest which matured between January 1, 1938, and January 1, 1941. For the remainder of their total claims as of January 1, 1941, they will receive for each $100 of claim, about 0.195 share of new no-par common stock.

In addition, the plan provides that $10,000,000 principal amount, of Wisconsin Central first and refunding mortgage bonds (or the proceeds from a sale thereof) now pledged as collateral security under the debtor's first refunding mortgage will be delivered to the reorganization managers for the benefit of the holders of the debtor's first refunding mortgage bonds ratably on the basis of the amounts of their total claims.

Treatment of Bondholders

In accordance with the above mentioned distribution of cash and new securities to holders of outstanding first consolidated, second, and first refunding mortgage bonds, such holders will receive for each $1,000, principal amount, thereof approximately the following cash and new securities:

Outstanding issue	Cash*	New first-mortgage bonds	New general mortgage bonds	Voting trust certifs. for shares of new common stock
First consolidated mortgage bonds:				
If interest matured 1/1/39 to 1/1/41 remains unpaid	$37.83	$112.76	$281.90	8.20
If interest matured 1/1/38 to 1/1/41 remains unpaid	39.42	117.50	293.75	8.54
Second mortgage bonds:				
If only $420 of interest matured 1/1/38 to 1/1/41 remains unpaid	—	—	—	11.68
First refunding mortgage bonds:**				
Series "A", if interest matured 1/1/38 to 1/1/41 remains unpaid	—	—	—	2.36
Series "B", if only $74,937.50 of interest matured 1/1/38 to 1/1/41 remains unpaid	—	—	—	1.96

* In addition unpaid interest matured 7/1/37 and prior thereto will be paid in cash.

** These bonds are also entitled to their distributive shares of $10,000,000 principal amount of Wisconsin Central first and refunding bonds pledged under the debtor' first refunding mortgage.

Under the plan deposit agreements are provided for holders of present second mortgage and first refunding mortgage bonds, which bear a Canadian Pacific interest guaranty, for the purpose of reserving to such holders their claims against the Canadian Pacific for the guaranteed interest to the date of maturity of their bonds not paid by that company.

For its payments as guarantor of the specified interest coupons on the first consolidated mortgage, second mortgage and first refunding mortgage bonds, the Canadian Pacific will receive for each $100 of interest so paid on the guaranteed first consolidated bonds, about 1.174 shares of new no-par common stock; for each $100 of interest so paid on the second mortgage bonds, about 1.156 shares of new no-par common stock; and nothing for interest so paid on the first refunding mortgage bonds.

Stock to Be Placed in Voting Trust

The plan further provides that all of the new common stock issued in the reorganization will be placed in a voting trust, two of the voting trustees to be designated by representatives of the holders of the debtor's bonds (other than the Canadian Pacific) and three by the Canadian Pacific. All of the new stock except that receivable by the Canadian Pacific as a creditor in the reorganization will be subject to an option by that road, continuing to December 31, 1950, to purchase 25 per cent of the total of such shares at a price of $2 a share.

Division 4 also finds that the debtor's secured notes to the Railroad Credit Corporation, now held by the Canadian Pacific, are fully secured and should be paid in cash. The collateral security for the notes will be surrendered to the reorganization managers for pledge under the mortgages of the reorganized company.

The holders of the debtor's other now-outstanding secured notes will receive the collateral securing their obligations, any remaining claims against the debtor being treated as unsecured general claims not entitled to priority, for which no provision is made in the plan.

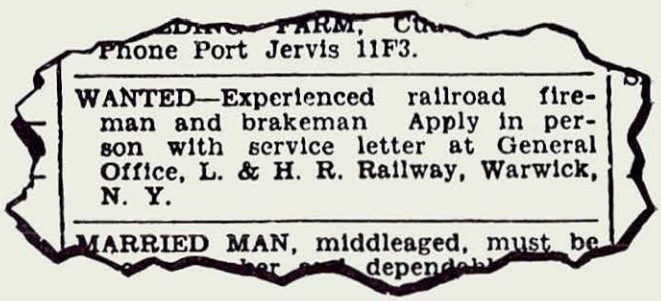
It is also provided that holders of the leased line stock certificates will have returned to them the Wisconsin Central stock in accordance with the terms of the preferred stock exchange agreement under which the Wisconsin Central stock was deposited and which has been or will be disaffirmed by the debtor's trustees. Any remaining claims by the certificate holders against the debtor will be treated as general unsecured claims, not entitled to preference, for which no provision is made in the plan.

Traffic Agreement to Be Continued

Following the examiner's recommendations, the final plan provides that the present traffic agreement with the Canadian Pacific will be continued in force for an indefinite period, subject to certain conditions, with the added provision that it can be cancelled by either party upon one year's notice after December 31, 1950.

It is finally provided that the plan will be carried out by three reorganization managers, one to be designated by each of the two institutional groups and one by the Canadian Pacific.

* * *


Phone Port Jervis 11F3.
WANTED—Experienced railroad fireman and brakeman Apply in person with service letter at General Office, L. & H. R. Railway, Warwick, N. Y.
MARRIED MAN, middleaged, must be

Sign of the Times

Many years have elapsed since railroads last advertised for operating employees in the newspapers. But the fact is that within the last few months a shortage of experienced employees has arisen *in certain restricted localities*. This want-ad was placed in a Middletown (N. Y.) daily newspaper by the 72-mi. Lehigh & Hudson River.

NEWS

"Mr. Rails Comes to Town" — Norris

In tough times, the sturdy swain, rather than the glamour boy, is public favorite

Declaring that one of the railroads' troubles "is too many coaches and not enough players," Ernest E. Norris, president of the Southern, told members of the Bond Club of New York on March 25 that "it would put joy in many a railroad man's heart to see the owners of railroad securities out on the field when the opposition's heavy hitters come to bat." The speaker was of the opinion that the going for the railroads will be "tough" both tomorrow and the day after tomorrow, but that they'll win if they have a "team" behind them. "How about you on second base, or in the outfield? You have money on this game—plenty of it. How about doing something to help win the game?"

On the other hand, the Southern's president ventured the thought that the dramatic manner in which the railroads are handling the war load is winning for them a new public recognition and gratitude which may perhaps bear fruit in the new competitive struggle after the war is over. To bring out his point, the speaker likened the railroads, the public and the railroads' competitors to the country boy, the beautiful girl and the city boy, respectively, in the time-honored "triangle" plot of the movies. "In the role of the sturdy, inarticulate country boy, we can put the sturdy, inarticulate railroads. In the role of the lovely country girl, we can cast the equally lovely abstraction that we call the public. And to the role of the city boy we can assign our new forms of transportation—those that dress in flashy clothes and talk the fluent, boastful patter of adolescence. Here we have a three-star cast —the railroads, the public, and the other forms of transportation. Now let's see how these characters act out this venerable plot.

"For many years, the railroads have been 'going steady' with Miss Public, courting her favor at every opportunity. But somehow in the process of growing up, the railroads lost a great deal of their dash and romance. Hard work and long hours were their lot, so they found little time to acquire polish or education in the fine art of self-advertising. They were, in truth, a clumsy lot in their courting. They seemed never to find the right word at the right time. They always seemed to stumble over something when they tried to 'pop the question.'"

The "ancient" movie plot brings in a fire which traps all three of the characters. The sturdy country boy heroically saves both the girl and his rival and, of course, thereby wins the lady's gratitude and affection. In like manner, according to Mr. Norris, the necessity of the railroads in recent months has made the public aware of their work and their place in the sun. "Today, the railroads are turning in a 100 per cent plus job of living up to their pledge made in November, 1940, 'to meet to the full the demands of commerce and the needs of national defense.' So far not a single shipper in the United States (including Uncle Sam and all his family of departments and alphabetical agencies—War, Navy, W. P. B., Lend-Lease and all the rest) has been told that he cannot have all the rail service he asks for, when and where it may be needed."

[Commenting upon Mr. Norris' address editorially the Wall Street Journal said the sturdy country boy's problem springs "less from the competition for the young lady's favor than from the sometimes too overbearing threats of the young lady's kid brother (the railroad workers) and his constant demand for dimes and ice cream sodas."]

ODT Forms Transit Industry Advisory Committee

Formation of a Transit Industry Advisory Committee has been announced by Joseph B. Eastman, director of the Office of Defense Transportation. The committee, consisting of 11 members, will cooperate with Guy A. Richardson, director of ODT's Division of Local Transport.

Special N. I. T. League Meeting

The National Industrial Traffic League will hold a special meeting at the Netherlands-Plaza Hotel, Cincinnati, Ohio, on April 14. The stated purpose of the meeting is to discuss the national transportation situation and if possible to perfect plans which will assure adequate transportation for all in connection with the successful prosecution and winning of the war.

Freight Rates and Petroleum Prices

Marketers and shippers of petroleum and petroleum products were meeting this week with representatives of the Office of Price Administration for discussions of what price adjustments may be called for as a result of the Ex Parte 148 freight rate increases. The meetings were held in Washington, D. C., on March 23, and at St. Louis, Mo., on March 25, 26 and 27.

Minimum Load Set For Mdse. Cars

ODT issues its first mandatory order, requiring great changes in l.c.l. methods

Minimum weight limits on loadings of l.c.l. cars, beginning at six tons on May 1 and rising to 10 tons on and after September 1, have been established by Director Eastman of the Office of Defense Transportation in the first general order issued since ODT was established in December. The order (General Order ODT No. 1 — Merchandise Traffic) was issued March 24 with a May 1 effective date, and it also directs railroads to submit to ODT plans for individual or joint action to accomplish its purposes.

The order is built around the 10-ton, minimum-load requirement which must be met on and after September 1, although there are provisions stipulating that between May 1 and July 1, the aforementioned minimum load of six tons may be observed, while between July 1 and September 1 an eight-ton minimum will suffice. In an accompanying statement, Director Eastman said that it was his judgment that "the average loading of merchandise cars should be increased to 12 tons per car, and the operation of trap and ferry cars within terminal districts should be drastically reduced, if not eliminated." Loadings of merchandise freight in 1941 averaged 5.3 tons per car on intercity routes and two tons per car in intra-terminal movements, he pointed out.

Railroads are forbidden by the order to forward any car at less than the prescribed weight, unless the car contains military materials, unless no other common carrier is available to transport the shipments to be contained in the car, or unless permission is granted by ODT to forward the car. Certain additional exceptions to the blanket prohibition are set forth in the order.

If insufficient freight is available to bring the load of a car up to the required minimum within 36 hrs. after the freight is received, the traffic must be diverted to another carrier; and all types of carriers —rail, motor, water, and forwarder—are required to accept and transport shipments diverted to them, to the extent of their available capacity and subject to certain terms and conditions set forth in the order. Railroads thus diverting traf-

(*Continued on page 673*)

Employees to Get Identity Badges

To thwart saboteurs some lines adopt photo tags—Finger prints also recorded

A number of Eastern railroads are in the process of issuing identification cards or badges to employees whose duties require their entrance on property not open to the general public. In some cases the distribution is to be quite general; in others it will be limited to employees required to enter zones requiring extraordinary protection from sabotage.

Most extensive identification systems are being inaugurated by the New York Central, the New York, New Haven & Hartford and Grand Central Terminal—a property of both railroads in New York. The New York Central is preparing to issue identification cards to some 40,000 employees of the system who work at stations, yards, tunnels, interlocking towers and shops. Each employee will receive a 3⅞ in. by 3⅜ in. card of heavy cardboard bearing the employee's signature, Social Security number, physical description and 1⅜ in. by 1½ in. photograph. Dock workers of the road at Weehawken, N. J., New York and Buffalo, N. Y., will receive special identification cards bearing in addition their fingerprints, which will be checked by the Federal Bureau of Investigation. Fingerprint cards will also be required of all operating employees drilling cars in the yards of factories turning out war supplies and maintenance men working on sidetracks within such plants. Six crews of photographers are now covering the Central system. Employees of Grand Central who "must pass beyond the station platforms"—not including train crews—will receive similar cards.

The New York, New Haven & Hartford is in the process of furnishing photographic identification buttons or badges to all employees in Operating, Mechanical or Engineering departments required to go on the property in places not accessible to the general public. Shop forces at Readville, Mass., are already wearing badges. Distribution at Van Nest shops, New York, is under way and other points are in line for distribution shortly.

The Delaware, Lackawanna & Western is requiring the personal identification of all employees working along the waterfront and terminal areas at New York, including all employees of the marine department, pier workers and employees in terminal warehouses. Identification consists of a special card bearing the stamp of division supervisor to which there is affixed a photograph and fingerprints of the employees. Likewise, the Boston & Maine is requiring special identification in the form of a pass for dock facility employees on waterfront properties only, to permit them to pass Navy or Coast Guard sentries at certain points. For other classes of employees the regular pass for transportation is considered sufficient identification. The Reading has issued identification cards to waterfront employees, but has been informed that they will be obsolete after May, in accordance with new Navy regulations.

The Atlantic Coast Line reports that the majority of its employees are adequately identified by their card railroad pass, but that there is issued a photographic button or badge to certain of its shop employees, switchmen and other employees whose duties do not permit them to carry the regular card identification. The Southern is requiring special identification of operating employees only at Norfolk, Va., and Charleston, S. C., where its rails serve Naval bases. Here identification cards are carried by those who are required to go aboard ships. The Pennsylvania and Seaboard Air Line report that they have not yet instituted any special system of identification buttons or cards but that their officers are actively studying the question and that some kind of special identification may be instituted. The Norfolk & Western reports that it has not, nor does not, contemplate issuing photographic identification buttons to employees.

The Chesapeake & Ohio is planning to provide photographic identification buttons for all employees at its waterfront properties at Newport News, Va., and Presque Isle, its locomotive shops at Huntington, W. Va., and its car shops at Raceland, Ky.

The Baltimore & Ohio has been issuing photographic badges to employees located on its piers at Locust Point, Baltimore, Md., and is now in the process of issuing identification cards with photographs to all employees who have occasion to enter upon the property of industries producing war material, many of which are requiring some form of identification. In order to have the matter handled uniformly throughout the system, identification passes are being issued through captains of police of various divisions of the road. The Lehigh Valley is requiring identification cards of all employees and officers entering upon its pier properties. This provision applies even to general officers of the road.

Anthracite Trucking Gained 21.6 Per Cent in 1941

Railroad shipments of Pennsylvania anthracite in 1941 were 7.5 per cent greater than in 1940, while truck shipments were 21.6 per cent greater. Total railroad anthracite tonnage in 1941 was 44.2 million and truck tonnage was 7.5 million. A detailed analysis of these statistics appears in the March 24 bulletin issued by the A. A. R. Eastern Region Competitive Research office, 30 Vesey street, New York.

The trucks in 1941 handled 589,000 more tons of anthracite to Pennsylvania destinations than they did in 1940; 266,000 more tons to New York; 423,000 more tons to New Jersey; 38,000 more tons to Delaware, Maryland and the District of Columbia; and 20,000 more tons to all other destinations.

Big Truck Merger Gets I.C.C. Okay

Overrides Justice Dept. Objection saying regulatory powers modify trust law

Overriding objections of the Department of Justice's Anti-trust Division, the Interstate Commerce Commission has approved the acquisition by Associated Transport, Inc., of eight common carrier truck lines operating over 37,884 route miles generally along the Atlantic Seaboard from New England to Florida, but extending also to such points as Pittsburgh, Pa., Cleveland, Ohio, Nashville, Tenn., and New Orleans, La. All of the companies involved were among the group of 56 highway carriers whose plan to consolidate into the Transport Company of New York was rejected by the commission, as noted in the *Railway Age* of January 4, 1941, page 120.

In rejecting the contentions of the Anti-trust Division, the commission cited paragraph 11 of section 5 of the Interstate Commerce Act, wherein its authority over transport mergers, acquisitions, etc., is made "exclusive and plenary." Thus: "Section 5 authorizes us to permit unifications which would, except for such approval, result in restraining competition contrary to the anti-trust laws, where the disadvantages of such restraint are overcome by other advantages in the public interest, such as direct betterment in the public service of the carriers or indirect betterment through stabilization of the industry."

Rejected also was another Anti-trust Division contention that there was a "railroad-relationship" angle to the transaction because of the fact that Kuhn, Loeb & Co., which has been banker for the Pennsylvania and the Baltimore & Ohio, would obtain an interest in Associated Transport. Kuhn, Loeb's interest, the commission calculated, would amount to 13 per cent of the preferred stock and 9.53 per cent of the common, making it "improbable" that the banking house would have "more than a nominal voice in the formulation of operating policies;" and "clearly it would not have the power to control applicant." Previously the commission had asserted that "contrary to contention of protestants, it is clear that Kuhn, Loeb & Co. did not sponsor the proposal now under consideration."

Aside from approving the acquisitions, the decision authorizes their financing through the issuance by Associated of 54,049 shares of preferred stock, having a par value of $100 per share, and 931,891 shares of common without par value. The eight carriers involved are: Arrow Carrier Corporation, Paterson, N. J.; Barnwell Brothers, Inc., Burlington, N. C.; Consolidated Motor Lines, Inc., Hartford, Conn.; Horton Motor Lines, Inc., Charlotte, N. C.; McCarthy Freight System, Inc., Taunton, Mass.; M. Moran Transportation Lines, Inc., Buffalo, N. Y.; Southeastern Motor Lines, Inc., Bristol, Va.; Transportation, Inc., Atlanta, Ga.

Over the aforementioned 37,884 route

(*Continued on page 674*)

Rogers Sees Huge Trucking Changes

They are going to have to pool and double up, may have to drop long hauls

It appears "quite probable" that there will be no more new trucks manufactured until the war is over and that common and contract carriers will probably be required to pool loads to avoid duplication of runs "before this show is over." These were a few of the statements made by John L. Rogers, member of the Interstate Commerce Commission, and chief of the Motor Transport division, Office of Defense Transportation, at an informal talk before an audience of some 300 transportation men at a special meeting sponsored by the Commerce & Industry Association of New York on March 25. The speaker emphasized that his division must deal with *all* motor transport vehicles in the country, not just the "relatively few" common and contract carriers with which the term "motor transport" is customarily associated.

Mr. Rogers foresees that, because major parts replacements cannot be made, the supply of motor vehicles will diminish at a fairly rapid rate in the face of increasing traffic. Therefore, the major problem of his organization will be to get the best possible use out of existing vehicles. How wide its field is is indicated by the fact that total trucks are divided approximately one-third among farm vehicles; city delivery vehicles; and heavy common, contract and private vehicles, respectively. His division will have, among other sections, an inventory and analysis section which will have custody of the national motor vehicle inventory made last year. Also a field section will be created with offices in about 52 key cities to work out measures after consultation with civic, business, government and transport organizations.

All "luxury transportation" will have to go, according to the speaker. In his estimation many common carrier trucks are running loaded in one direction and empty in another, while other trucks are running loaded in the opposite direction. It is up to his organization to make one truck do the work of two in such cases.

In answer to a question from the floor whether operators of private trucks are to be forced "against their will" to use for-hire operators, Mr. Rogers declared that he makes no distinction between private and for-hire operations as far as national necessity is concerned. In his opinion, some operations in both classes must be eliminated. At any rate he is sure that "nobody will be able to carry on business as usual." Asked whether trucking companies will be permitted to pool loads to avoid duplication of runs, the motor transport chief said that not only will they be permitted to do so, but probably required to do so. In reply to another question he pointed out that "bonafide" applications for authority to haul petroleum by truck on short routes in substitution for railroad tank cars released for longer hauls have been handled by the I. C. C. in less than a day and assured the meeting that all possible expedition would be given to such applications.

Mr. Rogers has heard all sorts of rumors about ODT restricting the length of truck hauls and turning this business over to the railroads. He does not know whether such a step is likely—certainly none has been decided upon—but he is of the opinion that many existing long truck hauls are wasteful. Asked what authority ODT has to over-ride state size and weight limitations, Mr. Rogers replied that he was not certain, but cited that recent authority given the I. C. C. to direct motor transport service (in the same manner in which it has emergency authority to direct railroad service) is qualified by the phrase "not in contravention of state laws."

Tank Car Shipments Hit 439,000 Bbl. Daily

Daily tank car movements of petroleum and petroleum products to the east coast reached a new high of 439,200 barrels daily during the week ended March 14, according to an announcement by Petroleum Coordinator Harold L. Ickes. The previous record of 435,086 barrels per day was established in the week ended March 7.

In moving 439,200 barrels each day into the east, the 15 reporting companies loaded a total of 13,664 cars, the announcement pointed out. On the basis of an average of 225 barrels per car, this is equivalent to 3,074,400 barrels of petroleum and petroleum products. During the previous week, 13,536 cars were loaded, or the equivalent of 3,045,600 barrels.

First Retirement Board Unit Will Be in Chicago April 6

The Railroad Retirement Board's Bureau of Wage and Service Records, the first unit to leave Washington, expects to be open for business in its new Chicago home, 844 Rush street, about April 6. Other units of the Board's organization will follow until there is but a small liaison staff left in Washington.

A. R. E. A. Selects Dates for 1943 Convention

At a meeting on Thursday afternoon, March 19, immediately after the adjournment of the annual meeting of the association, the Board of Direction of the American Railway Engineering Association voted to hold its forty-fourth annual meeting at Chicago on March 16-18, 1943, and to develop the program for this meeting to meet the critical needs of the railways in these days in the same manner that contributed to the outstanding success of the convention last week.

Land Grant Rate Repealer Urged

Lea committee says, if gov't pays less than fair rates, others must perforce pay more

Following through on its previously-announced plan, the House committee on interstate and foreign commerce last week filed in the House its report recommending passage of H. R. 6156, the bill introduced by Chairman Lea for the purpose of repealing remaining provisions of the land-grant-rate law. The law was partially repealed by the Transportation Act of 1940, which, however, left the land-grant deductions applicable to the transportation of military and naval supplies and personnel. Uncertainty as to the present applicability together with the burden of moving the great volume of war traffic at reduced rates have crystalized the sentiment favoring complete repeal which finds expression in the unanimous report of the House committee.

The report reviews the history of land-grant legislation and then proceeds to discuss the changed conditions which the committee thinks warrant repeal. Attention is called to the fact that the government as well as the carriers benefited by the land grants in that the land retained by the government increased in value as the railroads opened up the country. Also, it is pointed out that when the land-grant acts were being enacted, there was but a light movement of government traffic, mainly troops and equipment and supplies required for their maintenance. By 1941, however, "139 separate agencies of the government were using land-grant rates."

The committee recalls that when the partial repealer of 1940 was under consideration, it was estimated that the government paid from seven to ten million dollars a year less than commercial rail rates. "Under present war conditions, though the amount is uncertain, the difference may amount to that much per month," the report added. The primary purpose of making the grants, it went on, was accomplished by the construction of the railroads, and the development of the territories they served. It is also recognized that even with the land-grant aid, the railroad builders "took a gamble," building many lines "beyond what prudent investment would have suggested"; and "many of the roads went through bankruptcies and insolvencies." Moreover, as the committee also states, the non-land-grant roads have been forced to enter equalization agreements in order to compete for government business. Later it is suggested that "if all rates were placed on the same level as the land-grant rates of 50 per cent, there are probably not five per cent of the mileage of American railroads that could continue to operate except on the basis of borrowed funds"; and "such rates, if permanent and universal, would destroy the borrowing power of all rail carriers."

The committee concedes that repeal would increase the freight bill of the gov-

ernment, but it had previously said that "discrimination in favor of government transportation as against the rates furnished the general public is no longer warranted." With respect to the latter the report in another place also had this to say: "The shippers and consuming public must pay the nation's freight bill. Where the government transports its freight for less than cost to the carriers somebody else must pay proportionately more than costs. The only alternative is unjust rates to carriers."

December Bus Revenues 30.5 Per Cent Above 1940

Class I motor carriers of passengers reported December, 1941, revenues of $14,911,656 as compared with $11,424,844 in December, 1940, an increase of 30.5 per cent, according to the latest compilation prepared by the Interstate Commerce Commission's Bureau of Statistics from 144 reports representing 145 bus operators. Passengers carried increased 33.4 per cent, from 15,165,906 to 20,232,063.

	Passenger revenue		Passengers carried	
	December 1941	December 1940	December 1941	December 1940
New England Region	$500,522	$450,698	1,410,570	1,114,266
Middle Atlantic Region	1,399,965	1,402,623	3,230,439	2,748,201
Central Region	2,500,095	1,972,988	3,787,492	3,040,900
Southern Region	4,271,578	3,082,956	5,381,511	3,690,841
Northwestern Region	516,900	444,060	402,868	365,215
Mid Western Region	1,207,724	907,025	963,086	667,575
Southwestern Region	2,359,263	1,570,596	2,637,309	1,717,080
Rocky Mountain Region	148,790	105,036	103,259	81,433
Pacific Region	2,006,819	1,488,902	2,315,529	1,740,395

The breakdown by regions of the bus revenue and traffic figures, which exclude data on charter or special party service, is given in the accompanying table.

New Haven Seeks I. C. C. Order on Rhode Island Fares

The New York, New Haven & Hartford has asked the Interstate Commerce Commission to institute a 13th section investigation of the refusal of the Public Utility Administrator of Rhode Island to allow the Ex Parte 148 increases on commutation rates within that state. The petition asks a finding that such refusal constitutes a discrimination against interstate commerce.

Pullman Adds 20 Sleepers on Chicago-Washington Run

The Pullman Company, on March 18, announced that more than 500 business men travel every night from Chicago to Washington, since the bombing of Pearl Harbor, and that it has had to add 20 extra sleeping cars on nightly runs from Chicago. Many trains have been split into two or more sections.

Joint Air Timetable Shows 50 Flights D. C. to New York

American Airlines has recently issued a small pocket-size card timetable showing flights from Washington, D. C., to Philadelphia, Pa., Newark, N. J., New York and Boston, Mass., operated both by itself and by its competitor—Eastern Air Lines. The timetable shows that American and Eastern together operate 50 flights daily out of Washington to Newark, N. J., and/or LaGuardia field, New York.

Emergency I. C. C. Power Over Motor Carriers

The Interstate Commerce Commission would obtain emergency powers over motor carriers similar to those which it has over railroads if President Roosevelt signs the Second War Powers Act, 1942, which was passed by Congress last week. Congressional action on the bill (S. 2208) was completed on March 19 when the Senate agreed to the conference report which had been accepted by the House on March 16.

Aside from thus making applicable to motor carriers the provisions of section 1(15) of Part I of the Interstate Commerce Act, the act stipulates that the commission's exercise of such emergency powers over motor carriers shall not contravene "state laws and regulations with respect to sizes and weights of motor vehicles." Another provision removes the present 180-day limit on the time within which the commission may authorize temporary motor vehicle operations, while another does the same thing with respect to temporary operating rights granted water carriers.

Associated Traffic Clubs' Treasurer Dies

William T. Vandenburgh, treasurer of the Associated Traffic Clubs of America and founder of the Louisville, Ky., Transportation Club, died on March 18 after an illness of six weeks. He was born at Fort Atkinson, Wis., and worked for several railroads in various capacities until 1898, when he entered the employ of the Southern at Louisville. In 1907, he entered the employ of the Seaboard Air Line and in 1937 retired as commercial agent at Louisville.

South American Freight Embargoed

Carrying out its usual policy of restricting movements of export freight to ports where ships are not available to receive the cargoes, the Car Service Division, Association of American Railroads, on March 23 issued Embargo No. 23 applicable with exceptions to Latin-America-bound freight moving through the ports of Boston, Mass., Portland, Me., New York, Philadelphia, Pa., Baltimore, Md., and Hampton Roads, Va. The embargo applies to freight consigned or to be reconsigned for export movement to destinations in Brazil, Argentina, Uruguay, Paraguay, Colombia, Ecuador, Peru, Bolivia, Chile, Venezuela, British Guiana, Dutch Guiana, and the Dutch West Indies.

Excepted is freight consigned to the Army or Navy, and freight moving on U. S. government bills-of-lading or on commercial bills-of-lading carrying reference to contracts made by War, Treasury or Agriculture departments. Also, any freight moving on permits issued by the Car Service Division's manager of port traffic.

Would Re-enact Chandler Act

Representative McLaughlin, Democrat of Nebraska, has introduced in the House H. R. 6840, a bill which would reenact chapter 15 of the Bankruptcy Act, which provides for voluntary reorganizations of railroad companies. The previous act, which was known as the Chandler Act, expired on July 31, 1940. The Baltimore & Ohio and the Lehigh Valley, effected voluntary interest readjustments under its provisions.

Representative McLaughlin gave no reason for introducing the measure at this time except that he felt that the law should be on the statute books so that at any time in the future a road could take advantage of its provisions if it so desired.

Settlements Between Carriers

The Interstate Commerce Commission, Division 2, has under consideration the question of adding a new section to the regulations prescribed in Ex Parte 73 for payment of rates and charges. The new section would stipulate that nothing in the regulations "shall be interpreted as affecting the interline settlement of revenues from traffic which is transported over through routes composed of lines of common carriers subject to parts I, II, or III of the Interstate Commerce Act."

The notice from I. C. C. Secretary W. P. Bartel said that persons wishing to state their views on the foregoing may do so by sending written communications (four copies) to the commission not later than April 6, 1942.

ODT Working on Government Seizure Bill

The legal department of the Office of Defense Transportation is working on a draft of a proposed bill which would clarify and elaborate the government's power to take over all forms of transportation under the 1916 statute, it was learned this week.

Published reports to the effect that a draft of a bill fixing the compensation to be received by transportation agencies whose facilities might be taken over by the government during the war emergency had been submitted to Congress were flatly denied at the ODT. However, it was learned that a draft of a bill to clarify and elaborate the government's powers under the 1916 statute may be submitted to Congress in the near future.

Pullman Rate Increases Effective April 1

Tariffs publishing the recently-authorized 10 per cent increase in Pullman Company fares and charges were filed with the Interstate Commerce Commission on March

23 with an April 1 effective date. The way had been paved for the filing when the commission on March 20 issued an order stipulating that until July 1 the increases might be applied without observance of the aggregate-of-intermediates provision of section 4 of the Interstate Commerce Act.

The commission's favorable decision in this Pullman rate-increase proceeding, which was docketed as Ex Parte No. 150, was reviewed in the *Railway Age* of March 21, page 586.

Sears Joins Transport Board Staff

F. L. Sears, manager of the Boston & Maine's Bureau of Statistics, has been appointed an assistant director of the Transportation Board of Investigation and Research's study of the relative economy and fitness of the various modes of transportation. As noted in the *Railway Age* of March 7, page 508, the director of the study is William J. Cunningham, the James J. Hill Professor of Transportation at Harvard's Graduate School of Business Administration.

Mr. Sears, who will be on leave of absence from the B. & M. while carrying out the assignment, will have charge of railroad cost studies. Two other assistant directors with practical experience in their respective fields will have similar assignments with respect to motor and water transport costs.

North Western Granted Injunction

The Chicago & North Western, on March 20, won a temporary injunction in the Federal Court at Chicago, under which the Illinois Commerce Commission is restrained from interfering in any way with the collection of a 10 per cent increase in the rates charged for four classes of commutation tickets. The temporary injunction replaces a restraining order granted March 11 and the three-judge statutory court fixed April 17 for a hearing on making the injunction permanent. Attorneys for the railroad pointed out that the road had increased the fares under an Interstate Commerce Commission order, but the Illinois Commerce Commission issued an order suspending the increases, leaving the railroad open to prosecution for disobedience. The injunction was required to protect the railroad from state punishment for carrying out the federal board's order.

O. C. Castle Appointed to ODT

O. C. Castle, former superintendent of transportation of the Southern Pacific Lines in Texas and Louisiana, who retired on March 15, has been appointed assistant director of the Division of Railway Transport, Office of Defense Transportation, with headquarters in Washington, D. C.

Mr. Castle was born at West Brownsville, Pa., on January 22, 1874, and began railroading as a messenger on the Pennsylvania in Dennison, Ohio, in 1892. He studied telegraphy and later served as an operator at various points on the Pennsylvania. In 1900 he entered the car service department of the Baltimore & Ohio, serving in various positions in the general manager's office, and as chief clerk to several division superintendents. From 1907 to 1911, Mr. Castle was statistician for the American Railway Association (now A. A. R.) and manager of the American Railway Clearing House. On the latter date he became car service agent for the Southern Pacific Lines at Houston, Tex.

He was appointed superintendent of car service in 1917, then going to Washington, D. C., where he served with the United States Railroad Administration, handling embargoes and permits in connection with Federal control of the railroads during World War I. After a little more than a year in Washington, Mr. Castle became staff officer for the regional director of the

O. C. Castle

U. S. Railroad Administration at Atlanta, Ga. In 1920 he returned to the Southern Pacific as assistant superintendent of transportation. He was promoted to the position of superintendent of transportation in the same year. Mr. Castle was granted a leave of absence in 1933 to serve as director of the Car Pooling Section of the Interstate Commerce Commission under Joseph B. Eastman, returning to his former position with the Southern Pacific in 1935, in which position he served until his retirement on March 15 of this year.

WPB and OPA Looking for Record Lake Ore Movement

Asserting that "lake shipments of iron ore this year must surpass all previous records," the War Production Board and the Office of Price Administration have called for the beginning of such shipments "at the earliest possible moment." The call came in a joint WPB-OPA statement issued March 21.

The statement said that the producers of the ex-lake ore are being asked to supply the iron and steel industry with "almost 90,000,000 tons in the 1942 season." Thus, "shipments must begin at the earliest possible moment and continue until ice conditions close the lakes next winter."

Meanwhile the Office of Solid Fuels Coordinator (Secretary of Interior Ickes) issued a statement announcing that the first 1942 shipments of lake-cargo coal were leaving Toledo, Ohio, on March 21. The Ickes statement also said that eight ore boats had previously left Toledo on the 19th for the Lake Superior ore-loading docks. "This," it added, "is believed to be the first time in history that coal and ore carriers have left their Winter berths on Lake Erie and departed for the upper lake regions prior to April 1."

Dispatchers' Wages Raised

A wage increase of $25 per month, retroactive to December 1, 1941, time and one-half for overtime above eight hours, excluding transfer time, and time and one-half when an employee works on his relief day, were granted dispatchers at Chicago on March 19, following nine days of mediation conferences before National Mediation Board members, consisting of George A. Cook and David A. Lewis. Extra dispatchers subject to seven days' work a week will be paid time and one-half for the seventh day. While the demands made last October were made upon all railroads at the same time, negotiations were conducted concurrently by three railroad committees representing the eastern, western and southeastern lines, and a committee representing the employees. The three groups of railroads signed agreements on the same day.

Representation of Employees

The National Mediation Board has made public results of recent elections held in connection with representation-of-employees disputes on several railroads.

The election among shop forces of the Louisville & Nashville resulted in a certification that the employees involved desired no change in their representation. Thus the machinists, boilermakers, sheet metal workers, and carmen (including coach cleaners) remain represented by organizations operating through the Railway Employees Department, American Federation of Labor; while the Brotherhood of Railroad Shop Crafts of America retained the right to represent blacksmiths and electrical workers.

In other balloting, Long Island dispatchers chose the American Train Dispatchers Association; locomotive firemen, hostlers and hostler helpers on the Southern Pacific of Mexico chose the Brotherhood of Locomotive Firemen & Enginemen; and coal trimmers on the Virginian chose the International Longshoremen's & Warehousemen's Union, Congress of Industrial Organizations. The latter won over the International Longshoremen's Association, A. F. of L., which had previously represented the coal trimmers involved.

Canadian Roads Issue Rules on Reservations

"To assist the Canadian railways in their desire to meet as fully as possible the sleeping and parlor car requirements of the public, the Canadian Passenger Association has been obliged to amend its rules governing the advance reservation of this type of accommodation," C. P. Riddell, chairman of the association stated on March 23. "Effective April 1, tickets for rooms, berths or seats will have to be paid for at least three hours prior to departure time of the train on which space has been re-

served, otherwise the space will be released and thus become available for sale.

"Reserved space on trains leaving between 8:01 p. m. and 12 midnight will not be held later than 5 p. m., but reservations made after 5 p. m. will be held until three hours prior to time train is due to leave. This applies to passengers located at the following points or within a five-mile radius thereof: Halifax, N. S.; Saint John, N. B.; Levis, Que.; Quebec, Que.; Montreal, Que.; Ottawa, Ont.; Toronto, Ont.; Hamilton, Ont.; London, Ont.; Windsor, Ont.; Port Arthur, Ont.; Fort William, Ont.; Winnipeg, Man.; Saskatoon, Sask.; Regina, Sask.; Edmonton, Alta.; Calgary, Alta., and Vancouver, B. C. Reservations made at all other points must be paid for prior to the departure of the selected train from its starting point, else the reservation will be automatically cancelled."

P. R. R. Installs Bike Stand for Commuters

The Pennsylvania has installed a bicycle parking stand at its passenger station in fashionable Bryn Mawr, in the Philadelphia (Pa.) suburban area, to meet the needs of passengers using bicycles in getting to and from the station. The facility is an open-front, three-sided, roofed structure, enclosing a regulation rack for 24 bikes. No charge will be made for its use.

The railroad does not accept custody of the vehicles placed in its stand and is not responsible for loss or damage arising from any cause. C. R. Morse, vice-president (operation), Eastern region, states that the railroad is prepared to build similar facilities at other suburban stations in the Philadelphia area if need for them develops. In the meantime, patrons can continue to check bicycles at the regular baggage rooms, in care of the station agents, under the present established charges. In addition, they may leave their bicycles, without charge, and at their own risk, in locations about the stations where they will not interfere with other patrons.

The P. R. R. is the second road in the country to provide such stands for its patrons. The Chicago & North Western has installed similar facilities at five stations in the Chicago suburban area and has ordered five more. Also the Chicago, Milwaukee, St. Paul & Pacific organized a committee some weeks ago to study the situation along its lines, with special attention to the probable demand.

Vogtle Sees Permanent Benefit from War-Time Co-ordination

That emergency co-ordination of the different modes of transportation for highest efficiency during the war may provide the basis of a permanent rationalization of transportation, was the opinion expressed by A. W. Vogtle, president, National Association of Shippers Advisory Boards, before the fifty-ninth meeting of the Southwest Shippers Advisory Board, at New Orleans, La., recently. The speaker saluted various figures concerned with gearing transportation to the special needs of the emergency, including J. J. Pelley, president, A. A. R.; Ralph Budd, until recently transportation commissioner of the Council of National Defense; Joseph B. Eastman, director, Office of Defense Transportation; and Colonel J. M. Johnson, Interstate Commerce Commissioner directly responsible for the Bureau of Service.

Of the latter, Mr. Vogtle said, "I hope and believe that his prestige and reputation will become so enormous that the Colonel will need only to crook his finger for that occasional slick individual, who believes he can beat the rules of the game, to quake in his boots. The decent citizen may lose and has lost some of what the Colonel terms privileges of ordinary times' but he need never fear an injustice at the hands of the Colonel." He also referred to Colonel Johnson's "Ten Points" (contemplating certain changes in shippers' privileges for increasing car utilization) which are now being studied by the Shippers Advisory Boards as an illustration of the practical collaboration which the Boards are giving to the problems of railroad management and regulatory authorities.

In discussing policies to be initiated to increase utilization of the transportation plant, Mr. Vogtle pointed to current plans in the Office of Defense Transportation for using trucks for shorter hauls and railroads for longer hauls. The Office has already sent out its "Directive No. 1, Merchandise Traffic" to general chairmen of the Advisory Boards for study and recommendation. This plan proposes that lightly-loaded cars in merchandise service—"a practice so frequently criticized by our boards"—be corrected, with the suggestion that small tonnage stations be handled by trucks.

Said Mr. Vogtle in extension of this subject: "Incidentally, such emergency co-ordination of the several regulated modes of transportation to the respective economic spheres may provide a valuable experience for the permanent adjustment of transportation to the national transportation policy. It would be a tremendous benefit to the public if this could be accomplished on basis of economic value and cost of each service without the attrition of ruinous and destructive rate war, but with the goal in mind of an independence in rate making as between the several modes of transportation, with rates reflecting the respective inherent advantages, and lower costs translated into lower rate levels."

$52,287,900 Suggested for Fiscal 1943 Rivers and Harbors Work

Expenditures for new rivers and harbors work in the amount of $52,287,900 could be "profitably" made during the fiscal year ending June 30, 1943, according to the annual report of the Chief of Engineers, U. S. Army, which was made public this week. The same report sets up amounts aggregating $50,885,310 for fiscal 1943 maintenance work on existing rivers and harbors projects. As noted in the *Railway Age* of March 14, page 566, the pending War Department Civil Functions Appropriation bill for fiscal 1943 carries rivers and harbors appropriations totaling $57,502,500, including $20,679,000 for new work and $36,823,500 for maintenance.

Among the larger projects in the report's list of projected new work are: Mississippi river, between Missouri river and Minneapolis, Minn., $12,180,300; Los An-

* * *

Modern Passenger Station Built by the Union Pacific at Las Vegas, Nev.

Built in 1940 to replace a stucco - faced Mission - type structure, this station was one of the first on the railways of the country to incorporate the truly Modern-type architecture. It is colorfully and architecturally decorated throughout its interior, is equipped with fluorescent lighting, and is air-conditioned, the ventilating and cooling system employing the same ducts as the winter heating system.

geles, Calif., and Long Beach harbors, $5,794,000; New York and New Jersey channels, $5,000,000 Missouri river, Kansas City, Mo., to Sioux City, Iowa, $4,990,400; Delaware river, Philadelphia, Pa., to the sea, $2,700,000; Missouri river, mouth to Kansas City, $1,600,000; New York harbor, $1,596,500; Louisiana-Texas Intracoastal Waterway, $1,550,000; Sabine-Neches Waterway, Texas, $1,475,000; Neah Bay, Wash., $1,375,000; Mississippi river between the Ohio and Missouri, $1,300,000; Black Rock channel and Tonawanda harbor, N. Y., $1,208,000; Southwest Pass and South Pass, Mississippi river, La., $1,020,000; Great Lakes to Hudson river waterway, $1,000,000.

The report reveals that during the fiscal year ended June 30, 1941, the net funds made available for rivers and harbors work totaled $116,919,061, and rivers and harbors expenditures in fiscal 1941 from such funds and earlier appropriations totaled $86,556,789.

Coal Co-ordinator Sees Transportation as Shortage Factor

Expressing disappointment with the results of the coal-stocking campaign initiated last Summer and urging coal dealers and consumers to buy up fuel and store it during the Spring and Summer when there is unused mine and transportation capacity, Howard A. Gray, acting director of Solid Fuel Co-ordination, told a "United Victory Convention" of coal dealers and producers in New York on March 19 that transportation and labor supply will affect the nation's coal supply more than other factors. He said that early in the year it was estimated that about 550,000,000 tons of bituminous and 60,000,000 tons of anthracite would be required in 1942, but that these figures are subject to further revisions upward. He referred to estimates made by "responsible" men and organizations, based on later data, which place soft coal requirements at nearer 575,000,000 tons.

On transportation, Mr. Gray declared:

"Coal—anthracite and bituminous—represents the biggest single transportation job that the railroads have to meet. Coal constitutes one out of every three tons of freight carried by the American railroad system. Therefore, since this commodity makes up such a great portion of the railroad freight burden, it may be expected that shortages of transportation which may occur would seriously affect the movement of this fuel.

"Furthermore, the nation's dependence upon railroad transportation is growing, not only because of the natural increase in the use of fuel, but also because of the effects of the war which may shift more and more of the coal burden from other carriers to the railroads. I might point to a few specific examples of how the coal transportation burden may be gradually shifted perforce to the rails. First, consider the effects of the shortage of rubber in face of the fact that last year more than seven and a half million tons of anthracite and from 35 million to 40 million tons of bituminous coal were carried by trucks from mines to destinations. You may have read in the newspapers predictions that transportation facilities may be called upon to move more than 86 million tons of ore during the Great Lakes navigation season, which may require the railroads to take over a portion of the coal burden ordinarily moved by lake.

"I am sure that you are familiar with the effect of the new marine restrictions upon tidewater collier shipments of coal from Hampton Roads. This has lowered the capacity of the fleet. The railroads may have to make up this deficit, along with carrying the increased amount of coal that will be required in New England and other Atlantic Seaboard States due to the shortage of fuel oil, the reduction in potential water power in the wake of last summer's drought, and because of the ordinary increase in the demand for coal entailed in the increased war industry activity. Canada will require substantially more coal from American mines this year. This will mean more long hauls for the railroads."

Mr. Gray also said that there would be a serious problem of getting mine workers to and from their homes. A great many mines are located in isolated places which have no public passenger facilities. At present groups of miners travel from 10 to 20 miles per day in automobiles. "Few, if any, company towns have been built in recent years, and the old work trains generally are a thing of the past."

How to Pack Machinery for Export

Although the railroads are primarily interested in the proper preparation of shipments for domestic movement, in view of a need for special information the Freight Container Bureau of the Association of American Railroads has prepared a 27-page illustrated manual on the subject "Preparing Machinery for Export Shipment." One of the most attractive booklets which the Bureau has yet issued, the manual sets forth the general principles of container construction and methods of interior blocking so that American industrial machinery—known and used throughout the world—may be exported with a maximum of safety and a minimum of cost.

The booklet points out that packing for foreign markets must meet two conflicting demands: (1) Necessity for safe delivery of goods in foreign country, and, (2) the desirability of transporting the products with the least expense to the importer from customs duties and freight charges based on cubic measurements and weight. Special requirements of export packing include strength to withstand strain of loading and unloading by cranes and shifting of cargo from motion of ship; protection of goods from ocean spray, and humidity and pilferage. The manual is replete with photographs and diagrams, covering even such details as the effect of the number of nails on durability of boxes. Copies of the manual are now available and may be secured from Edward Dahill, chief engineer, 30 Vesey street, New York, at 25 cents a copy.

The Who, Where, How and Wherewith of the Alaska Highway

The release of correspondence between the American and Canadian governments has revealed for the first time the conditions under which the military highway from the United States to Alaska will be constructed.

The United States agrees to carry out the necessary surveys, build the highway, maintain it until the termination of the present war and for six months thereafter unless the government of Canada prefers to assume responsibility at an earlier date for the maintenance of so much of it as lies in Canada. The United States also agrees that at the conclusion of the war that part of the highway which lies in Canada shall become in all respects an integral part of the Canadian highway system, subject to the understanding that there shall at no time be imposed any discriminatory conditions in relation to the use of the road as between Canadian and United States civilian traffic.

For its part, Canada agrees to acquire the rights-of-way for the road in Canada (including the settlement of all local claims in this connection), the title to remain in the Crown in the right of Canada or of the Province of British Columbia as appears more convenient.

Canada also agrees to permit those in charge of the construction of the road to obtain timber, gravel and rock where such occurs on Crown lands in the neighborhood of the right-of-way, providing that the timber required shall be cut in accordance with the directions of the appropriate department of the government of the province in which it is located, or, in the case of Dominion lands, in accordance with the directions of the appropriate department of the Canadian government.

The exchange of correspondence also reveals the general route of the highway. It will follow the "general line of airports, Fort St. John, Fort Nelson, Watson Lake, Whitehorse, Boundary, Big Delta, the respective termini connecting with existing roads in Canada and Alaska."

Would Establish Maximum Coal Price

The immediate establishment of a maximum price level of $2.5061 per ton as a weighted average for the entire industry for bituminous coal, f.o.b. transportation facilities, has been asked by Luther Harr, Bituminous Coal Consumers' Counsel, in a brief filed with the Bituminous Coal Division of the Department of the Interior.

In asking a price ceiling for soft coal, Mr. Harr said that he is attempting to prevent runaway prices for the commodity which ranks second only to food in its importance to the nation and its war effort. Soft coal, the brief pointed out, produces 55 per cent of the country's energy and heats half of its homes.

Also, Secretary of the Interior Ickes has declared that although figures reported by Howard A. Gray, acting director of Solid Fuels Coordination, indicate some purchasing by dealers and consumers for protective storage purposes, there is no indication that the nation is storing coal in quantity sufficient to give it adequate wartime protection from possible shortages that may be caused later by transportation bottlenecks and other factors.

At the same time Mr. Harr hailed an announcement by the Reconstruction Fi-

nance Corporation that it will cooperate fully in the "Buy Coal Now" campaign. The RFC announced that it will lend direct through its local agencies or guarantee local bank loans to retailers to enable them to fill their stock piles to capacity.

Freight Car Loading

Loadings of revenue freight for the week ended March 21 totaled 796,640 cars, the Association of American Railroads announced on March 26. This was a decrease of 2,716 cars, or 0.3 per cent, below the preceding week, an increase of 26,656 cars, or 3.5 per cent, above the corresponding week last year, and an increase of 176,265 cars, or 28.4 per cent, above the comparable 1940 week.

As reported in last week's issue, loadings of revenue freight for the week ended March 14 totaled 799,356 cars, and the summary for that week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For Week Ended Saturday, March 14

District	1942	1941	1940
Eastern	166,739	171,922	136,954
Allegheny	176,003	172,014	126,534
Pocahontas	53,381	54,504	45,202
Southern	130,419	117,612	97,264
Northwestern	92,222	84,403	72,067
Central Western	117,156	106,873	95,182
Southwestern	63,436	52,279	46,185
Total Western Districts	272,814	243,555	213,434
Total All Roads	799,356	759,607	619,388
Commodities			
Grain and grain products	38,233	32,562	31,577
Live stock	10,868	10,189	10,639
Coal	155,612	162,246	126,575
Coke	13,755	14,121	9,044
Forest products	47,486	39,444	30,877
Ore	12,710	13,265	10,485
Merchandise l.c.l.	146,821	159,286	147,527
Miscellaneous	373,871	328,494	252,664
March 14	799,356	759,607	619,388
March 7	770,697	742,617	620,596
February 28	781,419	756,670	634,636
February 21	774,595	678,523	595,383
February 14	782,699	721,176	608,237
Cumulative Total, 11 Weeks	8,551,099	7,823,198	6,921,234

In Canada.—Carloadings for the week ended March 14 amounted to 62,795, as against 62,137 in the previous week and 58,131 in the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
March 14, 1942	62,795	33,114
March 7, 1942	62,137	33,609
February 28, 1942	63,553	32,729
March 15, 1941	58,131	30,474
Cumulative Totals for Canada:		
March 14, 1942	670,047	346,085
March 15, 1941	586,733	311,108
March 16, 1940	519,924	265,112

Luhrsen Discusses Overtime on the Railroads

Testifying last week before a Senate appropriations subcommittee which has been looking into the progress of the war production program, J. G. Luhrsen, executive secretary of the Railway Labor Executives' Association, said that he did not think railroad labor would demand a premium for working overtime if that were necessary for the prosecution of the war. He went on to explain that he had in mind a premium of double-time on Sunday, a provision which the brotherhoods do not have in their contracts with the carriers. However, he reminded the subcommittee that he could not and would not commit any of the railroad labor organizations to waive what the present working agreements called for in the way of overtime after certain hours. The brotherhoods now have agreements calling for time and a half for certain hours of service.

Labor, Mr. Luhrsen declared, is receiving far below its just proportion of a fair wage, let alone an exorbitantly high wage. He also observed that train dispatchers are still working for the 1936 rate of pay, but that they had just reached an agreement with the railroads on March 15 for an increase in wages.

Asked to comment on the Toledo, Peoria & Western labor controversy which resulted in government seizure of the road, Mr. Luhrsen said that the president of the road (George P. McNear) and his wife owned the line; that he had been told that it paid a dividend of 2,500 per cent last year. He also repeated the union's customary charges against the management of the road.

Queried as to whether there was any labor trouble brewing on the railroads, Mr. Luhrsen asserted: "I think we are in the most harmonious condition we have been in in years."

Meanwhile, on the other side of the Capitol, Thurman Arnold, assistant attorney general in charge of the anti-trust division, testifying on March 21 before a House judiciary subcommittee which was considering the Vinson bill to require the registration of labor unions and trade associations, severely criticized organized labor for alleged uneconomic practices in American industry.

He mentioned specifically the action of one faction of labor in a jurisdictional fight on the Chicago, North Shore & Milwaukee recently which resulted in the refusal of employees of the Chicago Rapid Transit Company to switch trains of the North Shore onto the Rapid Transit lines in Chicago, thus causing inconvenience to commuters. Asked by a committee member as to whether or not any legal action had been taken against the union members, Mr. Arnold emphasized that none could be taken as they had violated no law.

He also listed among the uneconomic practices of labor unions that of forcing truck operators and farmers in various cities to hire an extra driver who was a member of the union to take a truck into the city or pay for the services of such a union driver even though he did not do the actual driving.

* * *

Hey — Student Passengers
Sh-h-h-h-h!

● DID YOU EVER NOTICE THAT THERE IS NEVER A COP ON A TRAIN?

That's because we railroad fellows believe that human nature is good nature.

Many of our regular customers have recently complained to conductors about the distracting noises, commotion, and loud talk among some student passengers. We checked up — they are right—some of you are thoughtlessly annoying.

There are only a few countries in the world today that can boast of considerate manners by young and old in public places. Your U.S.A. is one of the few.

So—won't you please be considerate?
Let the brakes do the squealing
Let the whistle do the whistling
Let the smoke stack do the snorting
Let the train do the roaring
Let the rails do the screaming
Let the engine do the pulling and pushing
Let the trainmen do the announcing
Let the conductor do the aisle pacing

Give the other fellow a chance at that seat.

We want to handle this problem with you instead of with your school authorities.

Thanks for your patronage and your help.

Boston and Maine Railroad

This Is a Reduced Copy of a 4½ In. by 7½ In. Circular Which the Boston & Maine Recently Distributed to Its Younger Set of Suburban Patrons Suggesting More Consideration in Their Behavior

S. O. Dunn Sees No Serious Transport Shortage

"I predict confidently that there will be no serious shortage of freight transportation this year, and that whatever shortages there may be will be brief and local. This prediction is based upon experience during the last two years, and the still large potentialities of expanding railway freight service." So declared Samuel O. Dunn, editor of *Railway Age* and chairman of the Simmons-Boardman Publishing Corporation, in an address on "The Outlook for Transportation" at the annual convention of the Midwest Hotel Association in Chicago on March 17. 'There is only one real danger in the situation," said the speaker. "This is the continuing failure of government authorities to allocate to the railways and manufacturers of railway equipment and supplies enough materials to build enough new locomotives and cars and adequately to maintain railway properties.

"In 1941 the railways ordered 1,436 new locomotives, but only got 1,047. This, however, was the largest number built since 1926. They ordered last year 118,371 freight cars, but got only 79,396. This, however, was the largest number built since 1930. The trouble is not that they have not been getting more equipment than in years, but that they have not been getting as much as they have believed they will need to meet the maximum probable demands of traffic. However, Director of Defense Transportation Eastman is cooperating in efforts to get needed materials; shippers are giving unprecedented cooperation in loading cars heavier and speeding their loading and unloading; there are still possibilities of greatly increased efficiency in the use of equipment; and, consequently, no informed person apprehends a so-called railroad 'breakdown.'

"Prospects of passenger transportation are much less clear. They are so uncertain because of the uncertainty of highway transportation due to the rubber situation. Orders were placed last year for 548 passenger-train cars; but owing to shortage of materials only 299 were built. Until recently, at least, there was more

than ten times as much travel by highway—private automobiles and buses—as by railway; and, consequently, if one-tenth of travel by highway should be diverted to the railways, the demand upon the railways for transportation of passengers would be doubled. But everybody who observes the use of automobiles knows that motorists, by reducing the speed of driving and co-operatively increasing the number of passengers per car, can greatly reduce the wear of tires, while enormously increasing the total passenger service rendered by automobiles. The total amount of passenger service rendered by both rail and highway can be further greatly increased, and at the same time rubber conserved, by utilizing automobiles and buses much more largely for short distances, and so rearranging the use of railway passenger cars as much more largely to utilize them for long distances.

"The problem of providing enough both short-distance and long-distance passenger transportation is that of so co-ordinating the use of highway vehicles and railway cars that there will be the least practicable duplication of service and the maximum practicable use of all means of travel. I can foresee what would be called a 'shortage' of passenger transportation; but I cannot foresee any need of it with sensible and co-operative use of all the passenger vehicles available."

Canadian Roads Seek Rate Adjustments

The Board of Transport Commissioners has reserved judgment at Ottawa on an application by Canadian railways to increase rates on import and export traffic between points in Canada and Canadian ports, to correspond with increases recently approved by the Interstate Commerce Commission in the United States. (Prices, including freight rates, in Canada, it will be remembered, are "frozen" for the duration of the war.)

Opposition was expressed by representatives of several private companies and trade organizations. The commission was informed that the Canadian Freight Association had previously placed its case before Price Administrator Stewart, who ruled that export freight rates were under the Dominion price "ceiling" and said that evidence would have to be presented before any increase in import rates could be permitted.

G. W. Walker, general solicitor for the Canadian Pacific, told the commission the increases being sought were a normal adjustment of competitive conditions, and said a refusal of the application would disrupt the relationship between Canadian and United States railways. James P. Harrington, of Boston, representing the New England Freight Association, said the commission's decision would be of great importance to American railways, and a refusal would disturb existing port relationships.

Several of the opponents to the application based their arguments on difficulties which they said importers would face as a result of being unable, because of price control, to pass on increased cost to consumers. Under war conditions shipping facilities rather than rates controlled the routing of traffic, S. B. Brown of the Canadian Manufacturers' Association said in presenting a brief opposing increases.

Swedish System Now Has World's Longest Electrified Line

The Swedish State Railroads now operates the longest continuous electrified line in the world. Opening of a newly-electrified stretch of track between Langsele and Boden on February 28 by Crown Prince Gustaf Adolf makes a continuous stretch of electrified line between Tralleborg, in the extreme south of Sweden, and Riksgransen at the Swedish-Norwegian border, 150 mi. north of the Arctic Circle—a distance of 1,252 mi.

Altogether, Sweden has a total of 2,995 mi. of electrified route-miles, of which the state-owned railways operates 2,629 mi., over which is carried 85 per cent of all traffic in the country.

Minimum Load Set For Mdse. Cars

(*Continued from page 665*)

fic are authorized to disregard routing instructions, and the order also sets up a formula for the division of revenues, applicable unless divisions arrangements have been provided by agreement or by order of the Interstate Commerce Commission.

The aforementioned requirement directing the railroads to formulate plans to accomplish the order's purpose stipulates that such plans may involve one or more of the following: Establishment of regularly scheduled sailing days for specified merchandise car lines; alternate or staggered merchandise schedules between any two or more points; reciprocal exchange of merchandise shipments between two or more points; pooling of merchandise traffic, or revenues, or both between any two or more points; joint loading or operation of merchandise cars between any two or more points; appointment by any carrier or group of carriers of one or more agents to handle their merchandise traffic. Plans drafted along the foregoing lines must be submitted to ODT which will then issue orders directing the carriers to carry them out, thus meeting the requirements with respect to the anti-trust laws as outlined in the recent agreement between Mr. Eastman and Attorney General Biddle.

Aside from the exceptions for cars containing war materials and movements for which no other common carrier is available or for which specific ODT permission is obtained, the minimum weight requirement will not apply to a car loaded to its full legal or visual cubic capacity; a car ineligible for interchange under M. C. B. rules; a refrigerator car loaded in the direction of its normal empty movements; a car containing perishables, or explosives and other dangerous articles; or a "pick-up or concentration car operated between points which, from previous experience or actual present knowledge, it is reasonable to believe will arrive at destination with a net load of at least 10 tons."

Commenting on the exceptions, Director Eastman pointed out that carriers could defeat the objective of the order by taking technical advantage of the exceptions. However, he believes that the carriers "will cooperate fully," and "relying upon this belief," the order was made "much less rigid in its requirements than would otherwise be the case." Mr. Eastman added that "this freedom of action places a corresponding responsibility upon the carriers to comply with the spirit of the order as well as its letter."

Meanwhile, the ODT director suggested that carrier plans for operating under the order may propose modifications of the minimum weight provisions wherever such are considered necessary and will not defeat the purposes of the order. "For illustration," he went on, "they may provide for the continued operation of a given car line, the average loading of cars in which is in excess of the minimum weight even though individual cars, due to daily fluctuation in traffic, may fail to meet such requirements." The initial plan of diverting individual shipments on a day-to-day basis, Mr. Eastman further said, "is neither efficient nor economical," and it is to be in effect only until there is a development of a "matured method of handling."

The order was made necessary, Mr. Eastman said, by prospective traffic demands which must contemplate maximum utilization of cars and locomotives lest the movement of essential military traffic be impeded. He went on to point out that during 1941 there was a total of 8,041,000 cars containing l.c.l freight forwarded by Class I roads, and, in addition, 780,000 cars used as trap or ferry cars. "Merchandise traffic," Mr. Eastman added, "therefore requires the equivalent of over 100,000 closed cars out of a total of about 850,000 cars. The l.c.l. tonnage carried is less than 1½ per cent of total railway tonnage."

Next the ODT director asserted that his responsibility "to insure continuous and expeditious movement of war traffic requires immediate action to eliminate methods of operation and duplication of parallel services which result in this wasteful use of closed cars." He pointed out that a number of railroads already have attained average l.c.l. loads in excess of six tons, and heavier loads on their principal merchandise traffic runs. Forwarders, with traffic "in many respects similar to rail l.c.l.," have attained "average loads in excess of 13 tons per car." Such loads, Mr. Eastman said, have been secured as a result of coordinated rail-highway operations, and in that connection he referred specifically to the plan of operating consolidated cars between a limited number of concentration points around which coordinated trucking services have been installed.

Then came Mr. Eastman's aforementioned statement that the loading of l.c.l. cars should be increased to 12 tons and the operation of trap cars eliminated. In the latter connection, he "shall expect the individual carriers to take vigorous steps looking to the complete elimination of these cars, regardless of tonnage, except where clearly justified from a service standpoint."

Mr. Eastman is not unmindful that the

effect of the order may in some instances cause inconvenience to carriers and shippers; but he relies "upon the patriotism" of all who will be affected "to cooperate in the highest possible degree." The objective, he had previously said, is to attain the improved utilization of closed cars "before the fall peak traffic is upon us." After the order becomes effective on May 1 the railroads will be required to make monthly reports, showing l.c.l. cars forwarded and the number of tons loaded in each. Also, such reports will list cars forwarded with less than 10 tons, "with an indication of the particular section or paragraph of this General Order authorizing such movement."

Big Truck Merger Gets I.C.C. Okay

(*Continued from page 666*)

miles they operate a total of 3,300 vehicles and employ 5,816 persons. After the consolidation, they would operate over 24,338 route miles, indicating a duplication between the carriers of 13,546 miles. While no one interest would own a majority of Associated's stock, the Horton interests "would more nearly approach control than any other." H. D. Horton, with members of his family, the report explained, would own 28.18 per cent of the preferred and 38.01 per cent of the common. Evidence to the effect that the consolidation "would bring into being the largest common carrier of property by motor vehicle in the United States," the commission said, "appears to be true, at least from the standpoint of revenues."

But the latter did not scare the commission. "There are," it said, "a number of large property motor-carrier systems presently in existence, most of which operate in the Middle Atlantic and Central States, notably the Keeshin system, Interstate Motor Freight System, and U. S. Truck Lines system. There is no indication that anything approaching a monopoly has resulted in that territory from the formation and operation of those systems. Considering the great number of motor carriers presently operating, the small amount of capital required to enter the motor transportation field, the advantages in certain respects which smaller motor carriers have over larger ones through their more intimate relations with shippers and ability to render a more personalized service, it would seem that monopoly is little to be feared at this stage of the development of the trucking industry. It is not necessarily true that applicant would be able to obtain any greater portion of the available traffic than the carriers involved now handle."

The commission discussed the elimination-of-competition angle at considerable length, emphasizing throughout the competition which would remain after the consolidation. It found that such remaining competition would be adequate, having previously concluded that the transaction would result in improved transportation service, more efficient utilization of equipment and facilities, and substantial operating economies. Meanwhile, the objections of the International Brotherhood of Teamsters, Chauffeurs, Warehousemen & Helpers of America, which claimed to represent between 80 and 85 per cent of the employees involved, had been withdrawn. Associated has agreed to recognize that union as a collective bargaining agent; and thus the union is now of the opinion that labor "will not be adversely affected by the granting of this application but, on the contrary, will be benefited thereby."

In discussing the general aspects of the transaction the commission asserted that "the benefits which would accrue from a unification of this sort are particularly important at this time because of the increasing demand for transportation facilities, on the one hand, and the shortage of equipment, on the other." The decision contemplates that there will be a follow through within a year to an actual consolidation into Associated of the properties of the eight carriers acquired. Also, certain contract carrier rights of two of the constituents would be cancelled, although one contract carrier operation of the McCarthy Freight System would be allowed to continue, pending final determination with respect to it in a "grandfather" clause case now before the commission.

Dissenting expressions came from Commissioners Splawn and Patterson, while the dissent of Acting Chairman Aitchison was noted. Commissioners Miller and Alldredge each filed a "concurring" opinion, while Chairman Eastman, on leave as director of the Office of Defense Transportation, did not participate. Commissioner Splawn's dissent asserted that the "alleged opportunities for economy are vague and speculative." He pointed out that the carriers involved have grown to their present size "under the dominating leadership of proprietary owners," who "are now willing to exchange that individual ownership for stock in the consolidated company." Mr. Splawn deplored this "substitution of paid management for personalized ownership" in the operation and control of the carriers involved, adding that the financial set-up will be such "as to make it convenient ultimately for the present proprietors to dispose of their interest to the public and to divorce ownership from management."

Dissenter Patterson objected to two aspects of the transaction as approved by the majority—the inclusion of McCarthy's contract operation, and the participation of Kuhn, Loeb & Co. In the latter connection, Mr. Patterson asserted: "The influence of such a financial power over the affairs of corporations, of which they own a part, is beyond the proportion of stock held. Evils which have attended such participation in railroad transportation are well known . . ."

Commissioner Miller's concurring expression was devoted to an expression of his view that provisions making the preferred stock a fully-cumulative, par value issue were "of questionable wisdom for a new corporation." While Commissioner Alldredge recognized that some features of the transaction "might be improved," he nevertheless found in it "one virtue which, to my mind, is sufficient to counterbalance all of its apparent imperfections." That virtue, Mr. Alldredge went on, "lies in the fact that regional or territorial boundaries have been disregarded and a transportation system proposed which is designed not only to serve local and regional needs but to function as a unit along national lines."

B. & M. Explains Passenger Facilities Policy

When the Boston & Maine's streamlined Diesel-electric "Flying Yankee" returns to service on April 1, after its yearly overhaul now in progress, to make its noon run from Boston, Mass., to Bangor, Me., it will run express to Lewiston, Me., eliminating the stop now made at Portland, Me. In explanation of the schedule change, J. W. Rimmer, vice-president (Traffic) of the Boston & Maine and its affiliate Maine Central, states: "The seating capacity of the 'Flying Yankee' is limited to 130 seats. Some days recently as many as 200 persons have tried to purchase tickets on this particular run. We have been selling from 30 to 50 seats to passengers desiring to ride from Boston to Portland and in so doing have been excluding many persons who desired to travel beyond Portland into eastern Maine and into Aroostook county. We decided, therefore, to eliminate the Portland stop on the noon trip of the 'Flying Yankee' and thereby accommodate those who wanted to travel the longer distance."

Mr. Rimmer emphasized that despite the increased demands of railroad passenger service by the public, "it is imperative that no new passenger mileage (schedules) be added in these war-time days. All available equipment and hauling power must be concentrated and preserved for the maintenance of established schedules and for the extra movements of fighting men and materials required for winning the war. . . . For many years we have carried a paragraph in our time tables which reads as follows: 'Schedules herein are subject to change without notice.' That hasn't meant very much to the general public, but from now until the end of the war and the return to normal conditions, it is likely to be a most important paragraph at any time. In other words, what we may announce today might necessarily be changed as quickly as tomorrow."

These facts have been incorporated into half-humorous full-page advertisements placed in newspapers along the road titled "The time has come," the Walrus said, "to talk of many things. . . ."

Carriers Will Need Imagination and Ability to Improvise

Pointing out again the "hard road which lies ahead," Director Eastman of the Office of Defense Transportation this week warned that in traveling that road the carriers "will need the same sort of creative imagination, versatility, and ability to improvise which characterizes modern warfare in the field of combat." The ODT director spoke at a Kansas City, Mo., meeting of the Trans-Missouri-Kansas Shippers Advisory Board on March 25.

Following through from the foregoing he asserted that the carriers "will need to operate more nearly as a unit than they do in normal times, to make cooperation the watchword instead of competition, to

share not only their freight cars but their passenger equipment and locomotives, and to pool their resources in many instances." With respect to the shippers Mr. Eastman recognized that they "have done and are doing much;" but he went on to call for expedited loading and unloading of cars and for heavier loads. He characterized the loading of cars as the "weakest point right now," as far as shippers are concerned. And while he hopes that "we can bring some tariff changes which will promote heavier loading," he nevertheless asserted that "even without such changes," he knows "there is much room for improvement."

Mr. Eastman also urged the shippers "to spread the load as much as possible over the year." In thus endorsing the campaign for the shipping of coal during the Spring and Summer, he took occasion to observe that "it is just as important that you do the same thing in the case of every other commodity that can be shipped, for storage if necessary, in the off-peak months."

The ODT director also discussed the "pressing but far from simple problem" of making the best possible use of trucks for as long as the rubber situation leaves them available. Trucks, he said, "ought not to be used where the railroads can do the work better, or vice versa." The rubber shortage, Mr. Eastman later asserted, "is not a mere scare but a sober reality." He warned that there will be few new tires for trucks and buses, once the existing supply is gone, until new sources of synthetic or other rubber come into full production; and "that may take three years." Thus, "the problem obviously is to make the existing supply of vehicles and tires last for essential purposes until that time arrives." At present, "many movements of trucks and buses are wasteful, and this is particularly true of empty truck hauls." ODT will soon have "a field force at work on that problem in cooperation with the operators." Previously, Mr. Eastman had said that "if, because of the rubber shortage, the railroads are ever called upon to move the traffic which the trucks now carry, and to do the work which the trucks now do, the burden which fell upon them by reasons of the diversion of water-borne freight will seem of minor consequence in comparison."

Speaking generally, Mr. Eastman stressed how in this war, the public at home "play quite as vital a part as the military forces," the main difference being that "we run far less risk and suffer far less hardship, and that the soldiers and sailors are not permitted to concern themselves over wages and hours of labors." The ODT director made no apologies, in this time of war, "for upholding the cause of transportation to the limit of my ability, or for regarding any threatened congestion in transportation as a danger as grave to the whole war effort as hardened arteries are to the human body." He is urging upon the War Production Board "the vital importance of adequate and efficient transportation;" but he warned that the carriers will not have "an abundance of materials, equipment, and facilities." Thus the necessity of maximum use "is emphasized time and again in the Executive Order which created the Office of Defense Transportation."

Equipment and Supplies

ILLINOIS CENTRAL.—Directors have approved a large locomotive and car buying program, the details of which will be announced shortly.

LOCOMOTIVES

THE BOSTON & MAINE has placed an order for three Diesel-electric switching locomotives of 1,000 hp. each with the Electro-Motive Corporation.

THE ARGENTINE STATE RAILWAYS are inquiring for three 2-10-4 type steam locomotives. This is in addition to the inquiry for from ten to fifteen 4-6-2 type steam locomotives previously reported in the *Railway Age* of January 17.

THE DULUTH, MISSABE & IRON RANGE has issued inquiries for ten steam locomotives of 2-8-8-4 type wheel arrangement. This railroad was first reported to be considering the purchase of new steam locomotives in the *Railway Age* of October 11, 1941.

FREIGHT CARS

THE LEHIGH & NEW ENGLAND is reported to be considering the purchase of new freight cars.

THE ROSOFF PANAMA CONSTRUCTION COMPANY is inquiring for 36 50-ton flat cars and four 70-ton gondola cars.

THE BESSEMER & LAKE ERIE has issued an inquiry for 800 steel hopper cars of 90 tons' capacity.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 25 70-ton covered hopper cars from the General American Transportation Corporation. The inquiry for this equipment was reported in the *Railway Age* of January 10.

THE UNITED STATES NAVY DEPARTMENT has ordered five 36-ft. 135-ton armored deck cars from the Haffner-Thrall Car Company. The inquiry for this equipment was reported in the *Railway Age* of February 21.

THE UNITED STATES WAR DEPARTMENT has placed an order for 500 eight-wheel 30-ton freight cars, including 350 box cars, 120 gondola cars and 30 flat cars, with the Magor Car Corporation. Materials for these cars will carry an A-1-a priority rating.

THE NATIONAL RAILWAYS OF MEXICO have placed orders for a total of 970 new freight cars as follows:

500 50-ton box cars—Magor Car Corporation.
200 50-ton gondola cars—Magor Car Corporation.
70 30 cu. yd. air-dump cars—Magor Car Corporation.
200 50-ton tank cars—American Car & Foundry Co.

The inquiries for the above equipment were reported in the *Railway Age* issues of August 2, September 13, and November 1 of 1941.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS has ordered 25 65-ft. mill-type gondola cars of 70 tons' capacity and 50 52-ft. 6-in. mill-type gondola cars of 70 tons' capacity from the Greenville Steel Car Company. This brings to 450 the number of cars currently ordered by this railroad, the original inquiry for which was reported in the *Railway Age* of February 21. The total order comprised the following:

250* 50-ton hopper cars—Pullman-Standard Car Manufacturing Company
25* 50-ton, 50½-ft. box cars—Pullman-Standard Car Manufacturing Company
50* 70-ton covered hopper cars—American Car & Foundry Co.
50* 50-ton high-side gondola cars—Bethlehem Steel Company
25 70-ton, 65-ft. mill-type gondola cars—Greenville Steel Car Company
50 70-ton, 52½-ft. mill-type gondola cars—Greenville Steel Car Company

* Previously reported.

PASSENGER CARS

THE NATIONAL RAILWAYS OF MEXICO have placed an order for 20 express-baggage cars with the Magor Car Corporation. The inquiry for this equipment was reported in the *Railway Age* of September 13, 1941.

SIGNALING

THE UNION SWITCH & SIGNAL COMPANY has received an order for materials for the installation of an automatic interlocking and for highway crossing signal equipment in Massillon, Ohio. The interlocking, when completed, will be part of the flood control project in the surrounding territory and will provide protection for the crossings of the Wheeling & Lake Erie, the Pennsylvania, and the Baltimore & Ohio at this location. Light signals are being used throughout, and all control apparatus will be housed in factory-wired relay cases located at the crossings, with the field installation work to be carried out by the construction forces of the Wheeling & Lake Erie signal department.

Knowlson Outlines Plan for Change from Priorities to Allocations

Announcing "a fundamental change in the priorities system," J. S. Knowlson, director of the Division of Industry Operations, War Production Board, revealed this week that between April 1 and June 30 most of the blanket preference rating orders will be revoked or allowed to expire, and companies operating under such orders will be required to apply for priority assistance in accordance with the Production Requirements Plan under which materials are allocated quarterly by quotas.

The WPB announcement stated that the "rapidly increasing materials requirements of the war program make it impractical to continue the use of preference ratings which have been assigned under existing 'P' orders to whole industries, without any exact check of the amount of material which such ratings may be used to ob-

tain." It added that "through the Production Requirements Plan, the director of industry operations will continue to assign ratings, but the rating assigned in each case may be used to obtain only a specified quantity of materials or products."

As noted in the *Railway Age* of March 21, page 629, freight car and locomotive builders operating under orders P-8 and P-20 have already been directed to arrange to obtain materials under the Production Requirements Plan, although P-8 and P-20 have been extended until April 30. Meanwhile, such materials as steel plates, copper and aluminum have been on an allocation basis. The new plan contemplates new limitation and conservation orders to curtail "less essential" production and "to force substitutions for scarce materials wherever possible in essential industries."

Rules for Steel Plate Consumers

Consumers of steel plates have been asked by the Iron and Steel Branch, War Production Board, to conform to a list of requirements in placing orders so that all plates possible may come from continuous strip mills. The requirements are:

Edges—Universal or strip mill edge should be acceptable for all plates that can be rolled within the limits of strip mills.

Widths—Plates should be 72 in. and narrower wherever practical on account of the larger number of units available in the industry. (6 strip mills can produce plates up to 72 in. wide, 1 up to 84 in. and 3 up to 90 in.).

Gauges—Gauges should be held to a minimum number. If possible, from 3/16 in. to ¾ in. use only increments of 1/32 in.; and from ¾ in. to 1½ in. increments of 1/16 in. Most strip mills can produce plates up to ¾ in. thick; some can produce thicker plates and some are confined to thinner gauges.

Lengths—To the fullest extent possible, lengths should be held to 30 ft. and under, on account of the number of mills whose maximum length is 30 ft. to 30 ft. 6 in. Multiples of short lengths desirable, but not to exceed 30 ft. 6 in.

Tonnage—A minimum of 10 tons per item for any width, gauge and length is required in order to obtain maximum strip mill production.

Marking—The marking requirements should be kept to a minimum that will properly identify the item.

Purchasing—Orders should be placed as far in advance as possible, giving full specifications and order of sequence. This should be not less than 30 days in advance of the first day of the month in which shipment is desired and preferably earlier.

Design—In designing new boats, particular attention should be given to the above requirements.

Stock—Any orders for stock material should be kept to a minimum number of widths and lengths.

Substitute Bus Services Prohibited

Director Eastman of the Office of Defense Transportation, on March 25 issued a general order prohibiting railroads and local transit companies from substituting bus service for train or street car service on existing rail routes, unless authorization for the substitution is granted by ODT. The order (General Order ODT No. 2) becomes effective April 1.

The requirements of the order are set forth as follows:

"On and after the effective date hereof, no carrier by railroad, in respect of the transportation of passengers, shall substitute a bus or buses for any vehicle or vehicles theretofore operated on rails, over any existing line or route of such carrier by railroad, unless it shall have been authorized so to do by prior order or orders issued by this Office. Such substitution shall not be made either directly or indirectly, nor through any person controlling, controlled by, or under common control or affiliated with such carrier by railroad.

"Whenever any carrier by railroad desires to substitute the use of buses for vehicles operated on rails it shall make application in writing to this Office for authority so to do, accompanied by a full statement of all facts and circumstances showing the need for the use of buses over any of its lines or routes; the relation, if any, between such need and the successful prosecution of the war; the availability of buses required to perform such substituted services, and such other considerations as may be pertinent to such application."

A "bus" is defined as "any rubber tired vehicle used in the transportation of passengers, having a capacity of ten or more passengers."

Commenting on the order, Mr. Eastman said: "In spite of the need for conservation of buses, tires, and other critical equipment and materials, transit companies in some cities are going ahead with plans to substitute buses for street cars on existing rail routes. Except under unusual circumstances, this practice is clearly contrary to the public interest. Accordingly, I have issued an order forbidding substitutions of this kind unless authorization is granted by this office."

Steel Only for Cars of Designs Recommended by A. A. R.

Allocation of freight-car steel will hereafter be recommended by the War Production Board's Transportation Equipment Branch only for the construction of cars conforming to the designs and specifications set forth in last fall's report on the Car Construction Committee of the Mechanical Division, Association of American Railroads. That report, recommending that during the emergency orders for new freight cars conform to 13 designs, was reviewed in the *Railway Age* of November 15, 1941, page 789.

The policy of the WPB Transportation Equipment Branch was announced by its chief—Andrew Stevenson—in a March 16 letter sent to all manufacturers of freight cars. As the WPB announcement put it, the proposal is designed "to expedite production of freight cars vitally needed for transportation of war supplies"; and it embodies a request from Mr. Stevenson that "all carbuilders supply each other with drawings and patterns when necessary so that all cars can be constructed to the same design." Moreover, the program has the Attorney General's approval for its execution in the manner set forth in Mr. Stevenson's letter.

The policy is applicable "to all orders placed after the first of this year and also to such prior orders scheduled for delivery so late this year that material utilized in construction shall not already have been processed or received." On orders received prior to the first of this year for cars scheduled for delivery after April 30, Mr. Stevenson suggests that the builders "file promptly with the Branch a statement itemizing the material to be utilized in their construction which has already been processed or received."

Previously he had noted how it had become "quite evident" that the railroads and carbuilders have been agreeable to adopting the recommendations of the Car Construction Committee report; and "moreover, all carbuilders have expressed their willingness to exchange the necessary drawings and patterns."

"I am sure," Mr. Stevenson went on, "every carbuilder appreciates that the reasons prompting this limitation of designs are threefold, namely: The need for construction of cars as quickly and efficiently as possible with the minimum use of plant facilities and labor so that such facilities and labor may be released for conversion to other types of work vital to defense; and secondly, the advantage of requiring fewer sizes and shapes to be rolled by the steel mills with consequent increased availability of steel production for Army, Navy and Maritime Commission purposes.

"While I am aware that efficient and expeditious production of cars could probably be obtained at any given plant by limiting production to the design currently being employed, such limitation does not seem to fully meet the above objectives of freeing the maximum of facilities in the industry as a whole or of increasing the tonnage of individual rollings."

Concluding, Mr. Stevenson told the carbuilders that the present request "supersedes all previous understandings you may have had from this office," and he was sure he could "count upon your cooperation in fulfilling the objectives of the above standardization and simplification program."

WELL OVER 30,000 WOMEN are now employed by North American railroads according to a survey to be published in the April "Railroad Magazine." This number grows rapidly as more men go into military service and defense jobs. The New York Central employs about 4,000 women; the Canadian Pacific 2,500; the Southern Pacific 2,200; the Canadian National 2,000; the Pennsylvania 1,300; and the Missouri Pacific 1,000. Most of these are stenographers, bookkeepers, station or ticket agents, Pullman maids, and wielders of dustpans and mops in trains and depots.

However, the wide variety of positions in the railroad industry which are open to women surprised James W. Holden, who conducted the survey. Mr. Holden mentions two women who have served as locomotive engineers, one locomotive firewoman and one brakewoman. Some women are crossing guards. One is a hewer of ties and one a railway horticulturist. There are two dozen railroad lawyers of the fair sex. More than a dozen women have been presidents or vice-presidents of steam railroads. One woman runs an overhead shop crane. The Baltimore & Ohio, first railroad to hire women (in 1855), now employs a draftswoman. So does the P. R. R. Four American women are Railway Post Office clerks; four others are Railway Express messengers. One operates a signal tower at Sunnyside yards, New York. Not long ago a lady working for the Northern Pacific roadmaster at Minneapolis, Minn., took full charge of building a new turntable and enlarging a roundhouse. And Miss Elizabeth O. Cullen, reference librarian for the A. A. R., is said to know more railroad facts than any other woman on earth.

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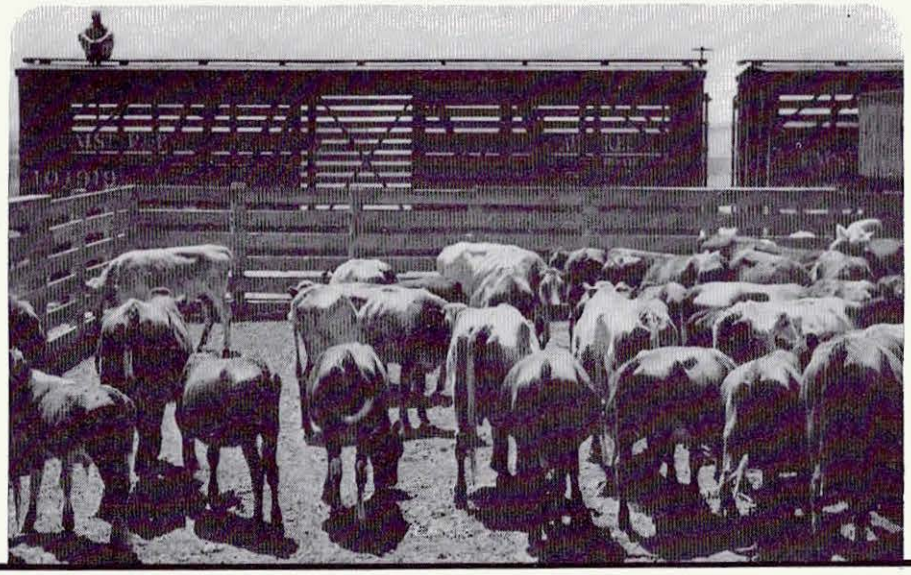
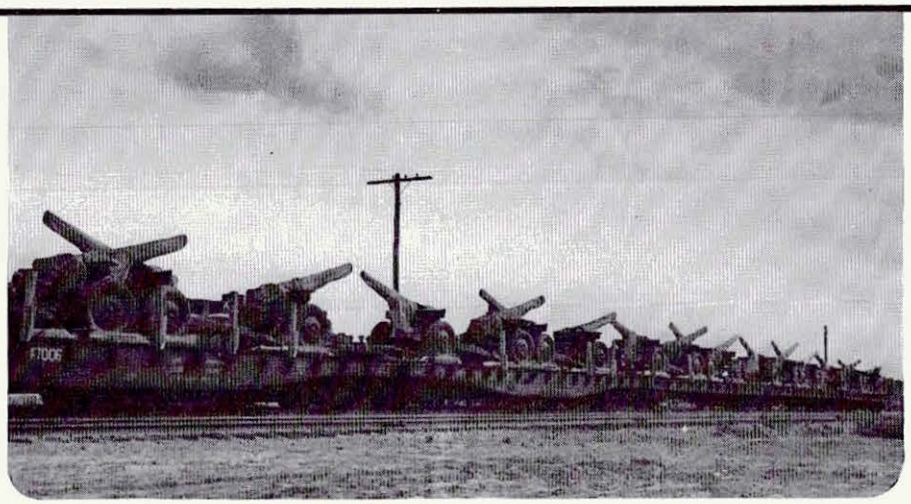


★ Cattle... and Cannon ★



DEPEND ON THE STRENGTH AND SPEED OF THE "IRON HORSE"

The hauling capacity and the speed that the country has come to expect from the railroads of the United States is being improved daily by the installation of Modern Super Steam Power on roads throughout the nation.

Lima-built steam locomotives are making impressive records on the fast freight and passenger runs of leading railroads from coast-to-coast. Augment your present power with a fleet of Lima-built super-power steam locomotives. The increases made in both capacity and speed will help you to "Keep 'em rolling" . . . . quickly and economically.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

Supply Trade

Fairbanks, Morse & Co. Annual Report

The Fairbanks, Morse & Co. reported 1941 net sales of $48,520,959, largest in the company's history. Net profit for the year after taxes and a special reserve of $750,000 for inventory and conversion losses incident to war production was $2,920,618, or $4.87 per share—largest since 1925. This compares with a net profit for 1940 of $2,749,699, or $4.59 per share. Taxes for 1941 amounted to $11.40 per share, as compared with $5.59 in the previous year. The company closed the year with a cash balance of $5,156,235—largest in its history.

The Symington-Gould Corporation Annual Report

Net shipments during 1941 by the Symington-Gould Corporation amounted to $11,721,224, as compared with $6,689,552 in 1940. Net earnings carried to surplus in 1941 totaled $837,795 ($.83 per share, common stock), as compared with $942,855 ($.93 per share, common stock) in 1940. Provision for federal taxes on income amounted to $754,000, as compared with $258,667 in 1940.

C. J. Symington, president, stated that at the urgent request of the government the corporation enlarged its facilities at Rochester, N. Y., during the year for the production of cast armor for tanks and steel castings for other military equipment. The company's board of directors approved the conversion of the Rochester plant to the manufacture of castings for war material and the concentration at the company's Depew, N. Y., plant of substantially all railroad production. Authorized replacements, additions and improvements, including the conversion of the Rochester plant, will have cost, when completed, approximately $1,661,250, all of which will have been paid out of the company's funds. In addition, the company made an agreement with the Government in November to build and equip, at the Government's expense, a new plant at Rochester for the production of cast armor for tanks. This new foundry, estimated to cost $1,256,105, will have a capacity of 6,000 tons annually. The Government recently requested the company to provide still additional capacity for manufacturing cast armor and plans are now being prepared to provide capacity for approximately 36,000 additional tons per year.

American Locomotive Company Annual Report

At the end of 1941, 75 per cent of the American Locomotive Company's production was for war. Backlog of business, including Canadian orders, totaled $253,200,000 on December 31, as compared with $138,300,000 at the end of 1940. (As of March 1, 1942, unfilled orders totaled $299,400,000.)

During 1941 the company delivered to United States and foreign railroads steam locomotives valued at $10,148,496, as compared with deliveries valued at $13,621,281 during 1940. The world's largest steam locomotive was built and 20 delivered to the Union Pacific railroad. The company also delivered Diesel locomotives valued at $12,956,861, which compares with $7,227,752 for the preceding year. A larger number of Diesel main-liners were sold for passenger and freight service than in any preceding year.

On December 31, 1941, American Locomotive had unfilled orders for 349 locomotives, which compared with a locomotive backlog of 74 on December 31, 1940. Significant operating comparisons during the year follow:

	1941	1940
Gross sales	$73,745,608	$38,438,938
Cost of goods sold	61,972,034	34,034,214
Depreciation	1,389,727	917,702
Profit from operations	$10,383,847	$3,487,022
Other income (int., etc.)	334,695	338,461
Idle plant expense	.....	31,291
Provision for federal and foreign income taxes	4,089,800	943,279
Provision for contingencies	1,000,000	.....
Net profit	$5,628,742	$2,850,913
Per share — common stock	$4.12	$.50
Current assets	$40,921,590	$20,433,366
Current liabilities	20,852,804	4,475,265
Ratio	2-1	5-1

Preferred stock dividends in arrears at the end of 1941 totaled $15,046,333, or $42.75 per share. William C. Dickerman, chairman of the board, stated that these arrears could not now be met out of earnings without great risk to the company due to its greater need for working capital, but expressed the hope that a proposal could be made permitting the company to deal with this obligation—possibly before the end of 1942.

The scope of the company's war effort and future commitments to the nation has required a net increase in the investment in plant assets, chiefly in connection with production of regular products, of approximately $1,958,000, a large percentage of which was for renewal and betterment of equipment and facilities. In addition, plant capacities were augmented by facilities costing approximately $5,300,000, which have been financed and are owned by the United States and Canadian governments.

Frank R. Wood, acting managing director of the **P. & M. Co., Limited,** Montreal, Que., has been appointed managing director to succeed **Gordon W. Dunn,** deceased. Mr. Wood has also been elected vice-president of **Engineering Materials, Limited,** Montreal, Que.

D. J. Williams, western railroad sales manager of the **Air Reduction Sales Company,** with headquarters at San Francisco, Cal., has entered the services of the U. S. Navy as lieutenant commander, and will be located in the Ninth Naval District, working with the Office of Material Procurement.

W. E. Corrigan, vice-president of the **American Locomotive Company** in charge of munitions and miscellaneous sales, has assumed additional duties as head of Diesel engine sales. Diesel locomotive sales remain under the supervision of Perry T. Egbert. Mr. Corrigan, who was a captain in the artillery ordnance branch of the United States Army during the last war, has participated in the negotiation of various recent government contracts with the American Locomotive Company for the production of ordnance and other war materials. He started with the company in 1909, completed a four-year course in locomotive construction at its Schenectady, N. Y., plant, and since has served in various engineering sales capacities. He was elected vice-president in 1936.

J. T. Baral, Jr., has been appointed advertising supervisor for the foundries divisions of the **Baldwin Locomotive Works.** Mr. Baral formerly was advertising manager for the Roberts & Mander Stove Co. of Philadelphia, Pa., and the R. M. Hollingshead Corporation of Camden, N. J.

E. P. Bullard, Jr., president of the **Bullard Company** of Bridgeport, Conn., and inventor of the Bullard vertical turret lathe, the mult-au-matic and the contin-u-matic, on March 10 marked the 50th year of his active participation in the firm founded in 1880 by his father.

The company's output of machine tools is now entirely for defense, carrying out a tradition started when Mr. Bullard's father was recalled from the Northern army in the Civil War to make pistols at the Colt plant in Hartford, Conn., and continued when Mr. Bullard turned out machine tools and 155 mm guns for the allied powers in World War I. When Mr. Bullard was graduated from Amherst College and completed his apprenticeship under his father, the company had 55 employees. There are now 5,000 employees built around a large nucleus of men trained under an apprenticeship program maintained throughout the depression years. Eighteen associates, whose service totaled 786 years, greeted Mr. Bullard on his golden anniversary as an industrialist.

OBITUARY

George L. Dunn, southern central representative of the Railway Appliances Division of the American Fork & Hoe Company, died in Kent, Ohio, on March 20.

William E. Woodard, vice-president in charge of design, and a director of the Lima Locomotive Works, Inc., died at his home, Forest Hills, L. I., N. Y., on Tuesday, March 24, after an extended illness due to a heart ailment. He was also consulting engineer of the Franklin Railway Supply Company, Inc. Mr. Woodard was born in Utica, N. Y., on November 18, 1873. He attended the Utica high school and Cornell University, where he received the degree of mechanical engineer in 1896. During his career he was connected with the Baldwin Locomotive Works, the Cramp Shipyard, the Dickson Locomotive Works, the Schenectady Locomotive Works, and the American Locomotive Company. His service with the Schenectady Locomotive Works, later to be merged in the American Locomotive Company, began in 1900. With the latter company he served successively as chief draftsman, manager of the electric locomotive and truck department, and assistant mechanical engineer until 1916. He was then elected vice-president of the Lima Locomotive Works,

in charge of engineering. In 1925 Mr. Woodard designed the Lima A-1 locomotive, with 2-8-4 wheel arrangement, which is a prototype of the modern steam locomotive combining high speed with high horsepower capacity. It was largely through his work, first embodied in a 2-8-2 type—the Michigan Central No. 8000 built in 1922—and culminating in the A-1 design, that the horsepower has superseded the tractive-force pound as the unit in terms of which steam locomotive capacity is customarily measured. In 1939 he introduced a new design of valve gear for poppet-valve locomotives. Mr. Woodard was the author of various papers on locomotive subjects and had been granted over 100 United States patents on improvements in locomotive and car construction. His principal inventions consisted of lightweight car trucks, height adjuster for subway cars, constant-resistance engine and trailer trucks for locomotives, locomotive throttle and throttle operating mechanism, tandem main-rod drive for locomotives, locomotive steam pipe and superheater header arrangement, articulated four-wheel trailer truck for locomotives, locomotive

W. E. Woodard

valve gear and poppet-valve cylinders, and a force-feed circulation boiler for locomotives. He was designated a "Modern Pioneer" by the National Association of Manufacturers in 1940, and in the same year was awarded the George R. Henderson Medal by the Franklin Institute, Philadelphia, Pa., in consideration of his accomplishments in locomotive engineering and his important contributions to the field of steam locomotive design. Mr. Woodard was a member of the American Society of Mechanical Engineers, the American Society for Testing Materials, the American Railway Engineering Association, and an associate member of the mechanical division of the Association of American Railroads. He was a member of the Mechanical Division Committee on Further Development of the Reciprocating Steam Locomotive and also a member of the Builders' Subcommittee of the Committee on Locomotive Construction.

Henry M. Lucas, founder and president of the Lucas Machine Tool Company, Cleveland, Ohio, died in that city on March 2. He was born in Cleveland, Ohio, on February 25, 1869, and served his apprenticeship as a machinist with the Warner & Swasey Co., which he joined in 1886. Later he became a department foreman and soon after was placed in the engineering

Henry M. Lucas

department. He became chief draftsman in 1895 and in 1899 left this company to organize the Lucas Machine Tool Company.

TRADE PUBLICATIONS

FLOODLIGHTING PROJECTORS—Catalog No. 21, published by the Pyle-National Company of Chicago illustrates and describes a complete line of floodlight projectors, from 10 to 12-in. short-range types to a 36-in. heavy-duty projector utilizing a 5,000-watt lamp. A number of new portable types are included. Much of the equipment shown is being widely used for plant protection. The catalog also gives complete specifications, including data on beam efficiency and candlepower and light distribution with various types of lens equipment.

DIESEL-ELECTRIC LOCOMOTIVES.—For large industrial plants, mines, and main line hauling, Diesel-electric locomotives of from ten to 80 tons are described in a new 100-page booklet issued by the Westinghouse Electric & Manufacturing Co. Characteristics of Diesel-electric units are compared to steam and mechanical locomotives from the standpoint of availability, reliability, safety and pulling power. Performance operation, motor and control data are given for 76 typical installations.

A discussion of main generators includes construction insulation, engine starting, and battery charging. Application and operation of controls cover the starting, running, and stopping sequence with an explanation of how smooth tractive effort is obtained. Determination of locomotive weight is quickly made from an application chart based on grades and load sizes. A tabulation of locomotive makes and models lists horsepower tractive effort and speed. A copy of booklet B-3000 may be secured from department 7-N-20, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

Construction

ALTON.—A contract amounting to approximately $64,000 has been awarded the Tillotson Construction Company, Omaha, Neb., for the construction of a 250,000-bushel storage addition to elevator No. 1 of the Alton Grain Elevator Company at Kansas City, Mo. This elevator, which will have a capacity of 1,000,000 bushels after the addition is built, is leased to the Mid-Continent Grain Company.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC-CHICAGO, ROCK ISLAND & PACIFIC.—Federal Judge Michael L. Igoe in the United States District Court at Chicago, has approved the construction of a new bridge over the Missouri river at Kansas City, Mo., and necessary approaches, to be owned and operated jointly by the Rock Island and the Milwaukee. The new bridge is expected to be placed in operation during 1943 and the cost of the structure and approaches is estimated at $2,623,000. The bridge will be part of a new line approximately 4½ mi. long, as reported in the *Railway Age* of November 16, 1940. A contract for preliminary surveys and tentative plans for the bridge was awarded Howard, Needles, Tammen & Bergendoff, consulting engineers, Kansas City, Mo., as reported in the *Railway Age* of August 30, 1941. The court order is subject to the final approval of the Interstate Commerce Commission, which is expected to be given at an early date.

CHICAGO, ROCK ISLAND & PACIFIC.—The Thorp-Rogoff Company, Chicago, and the Ready Coal & Construction Co., Chicago, were low bidders on the construction of a subway for 159th street (U. S. Highway No. 6) in Oak Forest, Ill., under the tracks of the Rock Island, which will cost approximately $210,000. The new railroad bridge will consist of two continuous rigid-frame double-track spans, each 34 ft. 6 in. long with a steel and concrete deck. The substructures will consist of reinforced concrete abutments and a center pier supported on piling. The Thorp-Rogoff Company will construct the substructure and erect the steel for the bridge. The Ready Coal & Construction Company will do all excavation and highway paving work. Some track changes are involved, since there are three tracks at this location and the bridge will provide for only two tracks. These changes, affecting a passing track and an industry spur, will be made by the railroad. The contract for fabricating the steel for this structure was awarded the Bethlehem Steel Company last fall.

GEORGIA & FLORIDA.—A contract has been awarded the Ross and White Company, Chicago, for a Red Devil locomotive coaler to be installed at Augusta, Ga.

MISSOURI PACIFIC.—A contract has been awarded the Austin Bridge Company, Dallas, Tex., for the construction of a 126-ft. half through truss span on concrete piers and two 10-panel creosoted open deck approach trestles over the Dow Magnesium Corporation's barge canal about four miles

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BETTER COMBUSTION

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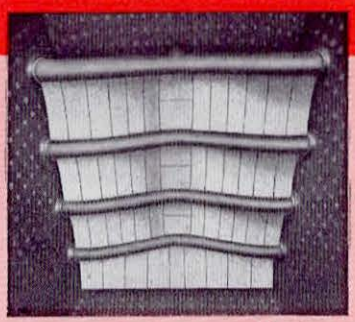
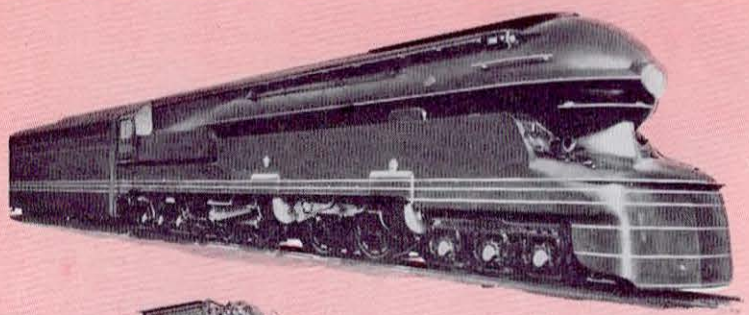
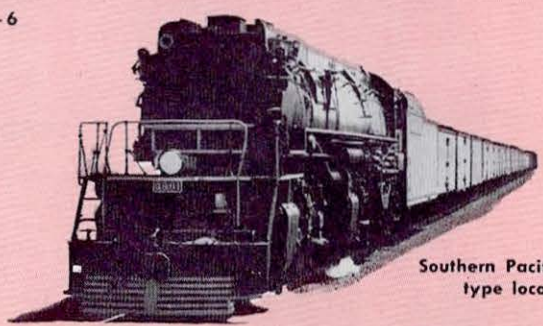


Typical Security Circulator and brick Arch installation in a locomotive firebox.

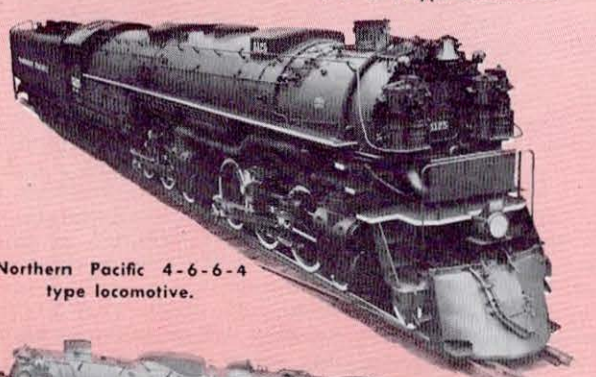


American Railroads 6-4-4-6 type locomotive.

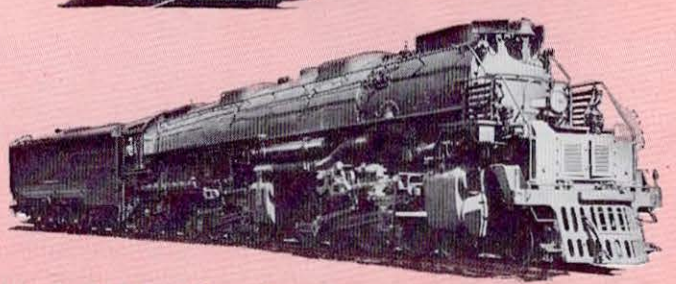
Denver & Rio Grand Western 4-6-6-4 type locomotive.



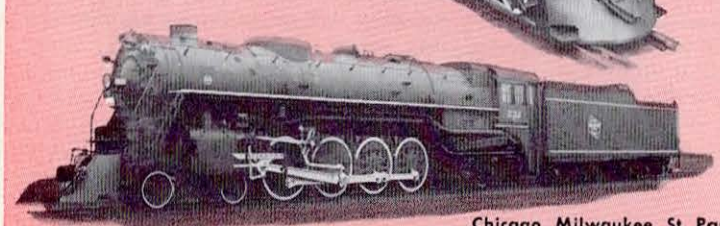
Southern Pacific 2-8-8-4 type locomotive.



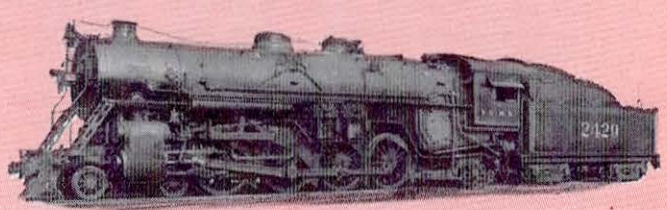
Northern Pacific 4-6-6-4 type locomotive.



Union Pacific 4-8-8-4 type locomotive.



Chicago, Milwaukee, St. Paul & Pacific 4-8-4 type locomotive.



Illinois Central 4-8-2 type locomotive.

AMERICAN ARCH

Security Circulator Division

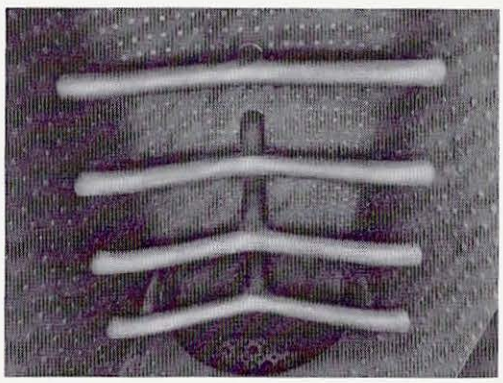
for all types of locomotives

SECURITY CIRCULATORS

The problem of supporting brick arches has been effectively solved by the Security Circulator, a development of the American Arch Company.

In addition, many other benefits have accrued. The reduction of honeycombing and cinder cutting lessens the maintenance of the boiler. The Security Circulator itself is extremely low in maintenance costs.

On the Security Circulators that have been installed during the last six years, performance has been thoroughly proved by over 18,000,000 locomotive miles of service.



View illustrating the positioning of Security Circulators in an average size of locomotive firebox prior to installing the brick arch.

COMPANY, INC.

NEW YORK CHICAGO

north of Freeport, Tex., and a 14-panel creosoted open deck pile trestle over the diversion channel of Union Bayou in the same locality. This work, which will cost about $114,000, will include a raise of grade of the track and will involve the construction of a small amount of temporary detour track by company forces. The total cost of the work will be about $130,000.

GREAT NORTHERN.—Contracts have been awarded the Ross and White Company, Chicago, for special locomotive sand handling equipment to be installed at Lind, Wash., and a Red Devil locomotive coaler to be installed at Superior, Wis.

NEW YORK CENTRAL. — A contract amounting to $1,344,680 has been awarded the Lomardo Brothers Construction Company, Cleveland, Ohio, by the Ohio Department of Highways for construction of the portion in Cuyahoga Heights, Ohio, of Willow Freeway between Cuyahoga Heights and Cleveland. This contract includes the construction of a railroad bridge for five tracks of the New York Central over the new highway in Cuyahoga Heights. The bridge will have two spans 49 ft. long, with a center pier located in the highway dividing strip. It will have a concrete trough-type deck supported on structural steel deck girders. The abutments and pier will be constructed of reinforced concrete. The principal quantities in the bridge construction will be 3,430 cu. yd. of concrete, 86 tons of reinforcing steel, 475 tons of structural steel and castings and 12,400 lin. ft. of reinforced concrete piling. The bridge will provide for two separated lanes for highway traffic, each 36 ft. wide.

PENNSYLVANIA.—The coal handling facilities of the Pennsylvania in the South Amboy, N. J., district will be greatly extended, and handling capacity increased, by the construction of an additional nine-track yard at Old Bridge, N. J. In order to accommodate increasing traffic, the company will also construct additional storage tracks, with a capacity of 500 cars, at Waverly, N. J., on the south side of the freight line at Greenville. Expenditures on the two projects will total nearly one million dollars. The improvement at Old Bridge, which will cost $390,000, involves the construction of nearly five miles of tracks and the installation of ten turnout switches on the north side of the main tracks between Brown's Hill rd. and Old Tennents Creek bridge. These tracks, which will have a capacity of 475 cars, will increase the efficiency of both the dumpers and of the yard operations, as they will permit the storage of cars in close proximity to unloading facilities. The additional facilities at Waverly, costing $570,000, will provide track room on which cars can be held until they can be handled, either through float bridges, or at the open dock or covered pier, at the Greenville yard. The track arrangement is so designed as to permit efficient and rapid switching when cars are required for unloading at Greenville. These additional projects for increasing and improving the Pennsylvania's freight-handling facilities in the New York harbor area, follow the recent completion of the extension of six tracks in the railroad's steel storage yard at Greenville, involving the laying of 3,350 ft. of additional track and increasing the ground storage capacity of the yard to 2,100 cars.

SOUTHERN.—A contract has been awarded the Ross and White Company, Chicago, for a Red Devil locomotive coaler, which will be installed at Lynchburg, Va.

VIRGINIAN.—This company has asked the Interstate Commerce Commission in Finance Docket No. 11428 to extend from June 30, 1942, to June 30, 1944, the time within which it may complete the construction of its Morri branch, extending from Morri, W. Va., 10.4 miles.

At the same time the company also requested the commission in Finance Docket No. 12298 to extend from April 15, 1942, to April 15, 1944, the time within which it may complete the construction of its Huff Creek branch in Wyoming County, W. Va., 11 miles.

Financial

AKRON, CANTON & YOUNGSTOWN.—*Annual Report.*—The 1941 annual report of this road and its subsidiary, the Northern Ohio, shows net income, after interest and other charges, of $329,784, as compared with a net income of $73,370 in 1940. Selected items from the consolidated income statement follow:

	1941	Increase or Decrease Compared with 1940
RAILWAY OPERATING REVENUES	$3,117,206	+$728,633
Maintenance of way and structures	474,967	+136,669
Maintenance of equipment	295,816	+48,481
Transportation	877,117	+179,726
TOTAL OPERATING EXPENSES	1,943,974	+284,151
Operating ratio	62.36	-7.13
NET REVENUE FROM OPERATIONS	1,173,232	+444,482
Railway tax accruals	306,149	+135,607
Hire of freight cars	227,006	+81,015
Joint facility rents—Net—Cr.	17	+100
NET RAILWAY OPERATING INCOME	657,168	+243,871
Other income	78,413	+23,944
TOTAL INCOME	735,581	+267,815
Rent for leased equipment	34,229	+4,599
Interest on funded debt	331,103	-2,131
TOTAL DEDUCTIONS FROM GROSS INCOME	405,797	+11,401
NET INCOME	$329,784	+$256,414

CHICAGO & NORTH WESTERN.—*Payment to Security Holders.*—The district court of Chicago on March 24, authorized the Chicago & North Western to pay $8,038,932 to security holders out of 1941 earnings. The court also approved the payment of three installments of principal on the 15 year serial notes held by a group of banks. Payments to the security holders are subject to adjustment in the event of revision of the road's reorganization plan. Payments will be made between June 1 and August 30 and will range from 1.64 per cent on the first and refunding 4½ per cent bonds to 4 per cent on the Sioux City and Pacific and Des Plaines Division bonds.

CHICAGO & EASTERN ILLINOIS.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon the following branch lines:

1. The State Line branch extending from Momence, Ill., to State Line Junction, 10.9 miles;
2. The Judyville branch extending from Rossville Junction, Ill., to Judyville, Ind., 13.3 miles; and
3. The Freeland Park branch extending from Milford Junction, Ill., to Freeland Park, Ind., 10.7 miles.

DENVER & RIO GRANDE WESTERN.—*Stock.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to invest $11,000 of a dividend paid to it in 1941, by the Denver-Colorado Springs-Pueblo Motor Way, Inc., in subscription and payment for 110 shares of $100 par value each of the capital stock of the Rio Grande Motor Way, Inc., the certificates of such stock to be pledged immediately with the Reconstruction Finance Corporation as further security for existing loans.

LEHIGH VALLEY.—*Abandonment by the Loyalstock.*—The Loyalstock and the Lehigh Valley, respectively, have been denied authority by Division 4 of the Interstate Commerce Commission to abandon a line and the operation thereof extending southwesterly from Noxen, Pa., to Splash Dam, 9.7 miles. Division 4 found that the proposed abandonment would result in the ruination of the ice business at Splash Dam which always has been dependent on rail transportation facilities.

LEHIGH VALLEY. — *Deferred Interest Paid.*—The directors of the Lehigh Valley, on March 25, authorized the first payment of deferred interest on the company's general consolidated mortgage bonds, under the plan of interest modification adopted in August, 1938. The payment will be made May 1, 1942, and will cover the balance of 75 per cent on coupons due November 1, 1938. The disbursement will total about $1,169,000, and will go to the more than 11,000 holders of the bonds who agreed to the plan for deferment.

LOUISVILLE & NASHVILLE.—*Operation.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to acquire trackage rights over a line of the Southern between Florence, Ala., and Sheffield, 2.9 miles.

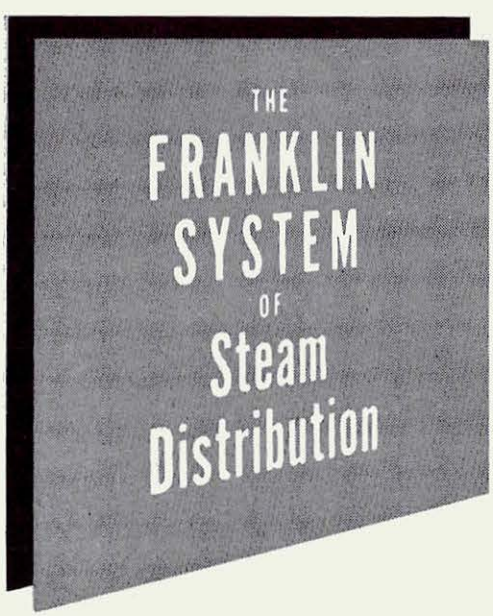
MISSISSIPPI & SKUNA VALLEY.—*Stock.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to issue $77,020 of common capital stock, consisting of 1,925.5 shares of a par value of $40 a share, to be exchanged, together with a cash payment of $35 a share, for a like number of shares of outstanding stock of a par value of $75 a share. The decision of Division 4 explains that the proposed action is to be taken because of the fact that the company

Continued on next left-hand page

"PLANNING FOR THE FUTURE"

"... Most of them (railroad operators) are convinced of the necessity of facing the problem of planning for the future insofar as that future can be foreseen with reasonable clarity ..."

Nelson Lee Smith, Chairman
Board of Investigation and Research
Transportation Act of 1940
In address before Traffic Club of Baltimore



Today, the Franklin Railway Supply Company is ready, not only with proved designs but with completely tooled-up facilities, to furnish American railroads with the means of increasing train-load-speed capacity that will aid materially in solving the problems both of *today* and of the *future*. Should traffic conditions change so that all the power made available by The Franklin System of Steam Distribution is not required, the increased efficiency is translated into fuel economy, resulting in a substantial reduction in transportation cost.

The Franklin System of Steam Distribution, if applied to existing locomotives, will increase train-load-speed capacity up to 33% at 70 mph.

Proved in the laboratory, in road tests and on the test plant, this device was offered to the railroads of America as a marked advance in the development of the steam locomotive.

FRANKLIN RAILWAY SUPPLY COMPANY, INC. NEW YORK CHICAGO

In Canada: **FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL**

has accumulated cash and assets readily convertible into cash in excess of its requirements and that it finds difficulty in safely investing such excess capital in a manner that will yield an adequate return. As a result of the commission's action, the company will return to the stockholders a part of their invested capital by reducing the par value of its common capital stock.

MISSOURI PACIFIC.—*Equipment Trust Certificates.*—The Missouri Pacific and three subsidiary roads announced on March 23 that they will open bids on April 7 for a $4,550,000 issue of equipment trust certificates. There will be four offerings: $2,240,000 by the Missouri Pacific; $1,290,000 by the St. Louis, Brownsville & Mexico; $630,000 by the International-Great Northern; $390,000 by the Missouri-Illinois.

SEABOARD AIR LINE.—*Abandonment by the Georgia, Florida & Alabama.*—The Georgia, Florida & Alabama and the Seaboard Air Line, respectively, have been authorized by Division 4 of the Interstate Commerce Commission to abandon the following branch lines and the operation thereof:

1. The so-called Carrabelle branch extending from Tallahassee, Fla., southerly to Carrabelle, 48.4 miles, and
2. The so-called East Quincy branch extending from Havana, Fla., westerly to East Quincy, 11.3 miles.

SOUTHERN. — *Joint Operation.* — This company and the Alabama Great Southern have been authorized by Division 4 of the Interstate Commerce Commission to jointly use portions of their tracks between Wauhatchie, Tenn., and Chattanooga. Under the proposed arrangement, the Southern will operate over the A. G. S. between Wauhatchie, Tenn., and the Memphis-Chattanooga Junction, 2.2 miles; while the A. G. S. will use the tracks of the Southern from Memphis-Chattanooga Junction, Tenn., to Chattanooga, 2.8 miles.

ST. LOUIS SOUTHWESTERN.—*Reorganization Plan.* — The Interstate Commerce Commission, in a supplemental report, has generally reaffirmed its final plan of reorganization for this company, details of which were given in the *Railway Age* of July 19, 1941, page 124, making only minor modifications. Various parties, including the debtor and the Southern Pacific, which controls the debtor, asked the commission to increase the capitalization from the original $75,000,000, but this the commission refused to do. Also, it refused to follow Commissioner Miller's suggestion in the original decision and issue warrants to the equity holders whose securities were found to have no value.

Under the supplemental plan the distribution of new securities, within the capitalization previously approved ($75,000,000) has been modified to reflect interest paid or authorized by the court to be paid on obligations in default, to June 30, 1941; and provision is made for the issue, in the discretion of the reorganization managers, of common stock of no par value in lieu of common stock of a par value of $100 a share.

Seemingly, the commission is taking notice of certain criticism of various federal courts in its other reorganization cases to the effect that in reaching a final capitalization it made no actual determination of the value of the property. In the instant case the commission, upon its own motion, makes the following findings of fact concerning the value of the road:

"In our prior report, we approved a total new capitalization of $75,000,000. We find that this is the value of the property for the purposes of this proceeding. It follows that the sum of the undisturbed and new securities, representing as they do the sum of the interests of all those who will have an interest in the properties of the reorganized company, are of the same $75,000,000 value; and we so find. We arrive at these findings from a consideration of the earning power of the property, past, present, and prospective, and all other relevant facts.

"With such a capitalization the railroad will be soundly financed. A higher capitalization would be unsound; and a lower capitalization would work an undue and unnecessary hardship on the investors. The valuation is thus based in the first instance on the requirements of sound financing; but sound financing in turn is necessarily based on earning power, past, present and prospective, and all other relevant facts. Sound financing of necessity requires that the reorganized company be well assured, in the light of its probable earnings, of being able to meet its obligations as they come due and to avoid another disastrous reorganization. It further requires that the railroad be in a condition to meet its obligations to the public of furnishing an adequate transportation service, unburdened by too heavy interest charges. We are of the view and find that the debtor will be able to meet its obligations of both kinds under the revised capitalization."

TENNESSEE CENTRAL.—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for $342,000 of 2¾ per cent equipment trust certificates, maturing in 20 semiannual installments of $18,000 on January 1 and July 1, 1943, and $17,000 on January 1 and July 1, in each year thereafter to and including July 1, 1952. The proceeds will be used as a part of the purchase price of new equipment costing a total of $380,000 and consisting of 100 all-steel hopper cars and two 660 h.p. Diesel-electric locomotives.

Average Prices of Stocks and Bonds

	Mar. 24	Last week	Last year
Average price of 20 representative railway stocks..	25.93	26.74	29.62
Average price of 20 representative railway bonds..	67.68	66.65	64.41

Dividends Declared

Atlantic Coast Line.—5 Per Cent Non-cumulative Preferred, $2.50, semi-annually, payable May 11 to holders of record April 24.

Dayton & Michigan.—Common, 87½¢, semi-annually; 8 Per Cent Preferred, $1.00, quarterly, both payable April 1 to holders of record March 16.

Joliet & Chicago.—$1.75, quarterly, payable April 6 to holders of record March 21.

Providence & Worcester.—$2.50, quarterly, payable April 1 to holders of record March 11.

Wheeling & Lake Erie.—$1.00, payable April 1 to holders of record March 24.

Carolina, Clinchfield & Ohio.—$1.25, quarterly, payable April 20 to holders of record April 10.

Railway Officers

EXECUTIVES

P. J. Schardt, assistant to vice-president (mail and express) of the Southern system, has been promoted to assistant vice-president in charge of mail and express traffic, with headquarters as before at Washington, D. C., effective April 1.

H. D. Pettus, general agent of the Tennessee Central, with headquarters at Clarksville, Tenn., has been promoted to resident assistant to the president, with the same headquarters, and the position of general agent at Clarksville has been abolished.

L. W. Baldwin, chief executive officer of the Missouri Pacific and vice-president of the Texas Pacific-Missouri Pacific Terminal Railroad of New Orleans, has been elected president of the T. P.-M. P. Terminal Railroad of New Orleans, succeeding **J. L. Lancaster,** president of the Texas & Pacific, who in turn has been elected vice-president of the terminal, replacing Mr. Baldwin.

FINANCIAL, LEGAL AND ACCOUNTING

Joseph F. Johnston, assistant general counsel of the Seaboard Air Line, has been appointed general solicitor, with headquarters at Norfolk, Va.

S. D. Hurst, Jr., assistant to general manager of the Atlantic Coast Line, with headquarters at Wilmington, N. C., has been appointed assistant secretary.

S. Burnell Bragg, assistant counsel of the Norfolk Southern, with headquarters at Norfolk, Va., has been promoted to general counsel, succeeding **Col. William B. Rodman,** who has been retired at his own request after 31 years of service.

Robert Brennan, attorney for the Coast lines of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal., will retire from active service, effective April 1. Mr. Brennan is a member of the Board of Governors and a former president of the Lawyers Club of Los Angeles.

H. L. Guin, assistant chief claim agent of the Southern, with headquarters at Greensboro, N. C., has been promoted to chief claim agent, with headquarters at Washington, D. C., succeeding **I. W. Haun,** who will retire on May 1 at his own request after more than 51 years of service.

D. P. Williams, assistant general counsel of the Pennsylvania, has been promoted to general attorney, with headquarters as before at Philadelphia, Pa. **Windsor F. Cousins,** assistant general solicitor, has been promoted to assistant general counsel at Philadelphia. **Guy W.**

Continued on next left-hand page

BEAUTY

'tis said — is only skin deep . . .

but beneath the beauty of the N & W speedlined 4-8-4 type locomotives that haul the streamlined "Tennessean" is POWER . . . the result of a well balanced boiler and machinery.

Maximum tube and flue heating surfaces, coupled with maximum superheating surface for large steam area and high temperature steam . . . and a well proportioned firebox and combustion chamber . . . make a well balanced boiler. That's what lies under the beauty of featured locomotives.

Method of control? That's accomplished by the multiple-valve type of throttle, integral with the superheater header. A series of warp-proof small steel valves provide gradual opening and perfect control.

Be sure these important engineering factors are specified for your new power.

A-1482

ELESCO

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE SUPERHEATER COMPANY

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Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

Knight and **John B. Prizer,** assistant general solicitors, have been promoted to assistants to the general counsel. **James W. Oram,** assistant solicitor, has been promoted to assistant general solicitor.

Mr. Cousins was born at Warren, Pa., and was graduated from the University of Pennsylvania with an A.B. degree and received his professional training at its law school. Following his admission to the

Windsor F. Cousins

bar in 1926 he entered the service of the Pennsylvania as assistant solicitor and was promoted to assistant general solicitor in 1932, which position he held until his recent promotion to assistant general counsel, in charge of legal matters connected with engineering and construction problems.

Russell M. Wilson, whose promotion to general real estate agent of the New York, New Haven & Hartford at New Haven, Conn., was reported in the *Railway Age* of March 14, was born at Winchester, Mass. He was graduated from Brown University and entered the service of the New Haven on July 12, 1915, as chainman in the valuation department. He

Russell M. Wilson

has been continuously employed in the valuation and real estate department since that time as recorder, junior land appraiser, senior land appraiser, and real estate agent at Boston, Mass. On May 16, 1929, Mr. Wilson was appointed assistant general real estate agent at New Haven, the position he held until his recent promotion.

OPERATING

Edward T. Fishwick, vice-president and director of the Worthington Pump and Machinery Corporation, Harrison, N. J., died on March 15 at his home in Glen Ridge, N. J.

Edward O. Eckert, terminal trainmaster on the Chicago, Milwaukee, St. Paul & Pacific at Davenport, Iowa, has been appointed trainmaster of the Kansas City division, with headquarters at Ottumwa, Iowa, succeeding **A. O. Thor,** whose promotion to assistant superintendent of the Coast division, with headquarters at Spokane, Wash., was reported in the *Railway Age* of March 21. **Kenneth R. Schwartz,** yardmaster at La Crosse, Wis., has been advanced to terminal trainmaster at Davenport, replacing Mr. Eckert.

Hubert C. Willis, whose promotion to superintendent of the Southern Kansas division of the Atchison, Topeka & Santa Fe, with headquarters at Chanute, Kan., was reported in the *Railway Age* of March 21, was born at Kyle, Tex., on August 11, 1895, and entered railway service on Jan-

Hubert C. Willis

uary 21, 1914, as a telegraph apprentice at Chase, Kan., later serving as a phone operator and acting agent on the Middle division. On August 13, 1915, he was promoted to agent at Courtland, Kan., and in November, 1917, he was appointed assistant timekeeper, car distributor and clerk at Newton, Kan. Mr. Willis was promoted at Newton to dispatcher in October, 1919, to night chief dispatcher in September, 1936, and to trainmaster in June, 1939. On October 21, 1940, he was transferred to Arkansas City, Kan., where he remained until his recent promotion, effective March 15.

J. P. Allison, trainmaster on the Erie at Dunmore, Pa., has been transferred to Meadville, Pa., succeeding **H. H. Clark,** whose promotion to assistant division superintendent at Chicago was reported in the *Railway Age* of March 21. **D. A. Logan** has been appointed trainmaster at Dunmore to succeed Mr. Allison. **F. X. Garland,** chief trainmaster, has been promoted to assistant division superintendent at Youngstown, Ohio. **C. S. Kinback,** trainmaster at Port Jervis, N. Y., has been transferred to Jersey City, N. J., succeeding **A. J. Sanok,** furloughed. **T. G. Wogan,** assistant trainmaster at Kent, Ohio, has been promoted to trainmaster at Huntington, Ind., succeeding **L. J. Roche,** who has been transferred to Port Jervis, to succeed Mr. Kinback. The position of assistant trainmaster at Kent has been abolished. **T. A. Dockery** has been appointed trainmaster at Youngstown, to succeed **W. B. Adams,** who has been transferred to Kent.

Frank D. O'Dea, acting superintendent property protection of the Erie, with headquarters at Cleveland, Ohio, has been appointed superintendent of property protection.

T. B. Ollis, assistant superintendent of transportation of the Southern Pacific Lines in Texas and Louisiana, has been promoted to acting superintendent of transportation, with headquarters as before at Houston, Tex., succeeding **Olin C. Castle,** who has retired from active service, and **G. M. Gage** has been appointed acting assistant superintendent of transportation, relieving Mr. Ollis. A biographical sketch of Mr. Castle's railroad career appears in the news section of this week's *Railway Age,* in connection with his appointment as an assistant director of the Division of Railway Transport, Office of Defense Transportation at Washington, D. C.

Albert Henry Woerner, whose promotion to superintendent of the Indianapolis division of the Baltimore & Ohio, with headquarters at Indianapolis, Ind., was reported in the *Railway Age* of March 7, was born at Philadelphia, Pa., on January 6, 1888, and graduated from the University of Pennsylvania in 1909. After graduation he went with the McClintic-Marshall Bridge Company at Pottstown, Pa., and on January 1, 1910, he entered railway service in the engineer corps of the B. & O. at Wheeling, W. Va., later being transferred to Pittsburgh, Pa., and then being promoted to assistant supervisor of

Albert Henry Woerner

track at Havre de Grace, Md. In 1913 Mr. Woerner was promoted to assistant division engineer at Philadelphia, Pa., later being transferred successively to Baltimore, Md., Connellsville, Pa., and Wheeling. On

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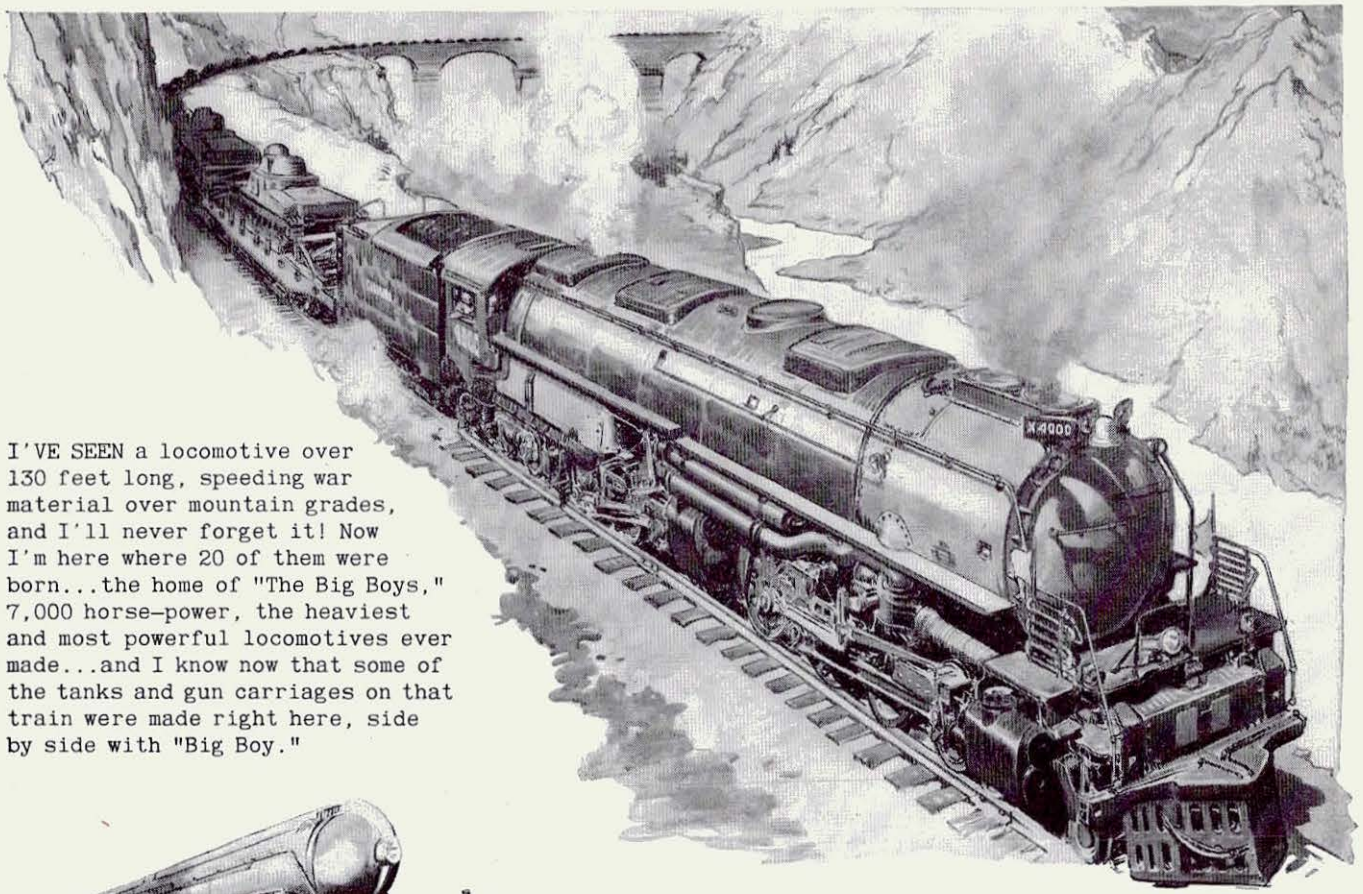
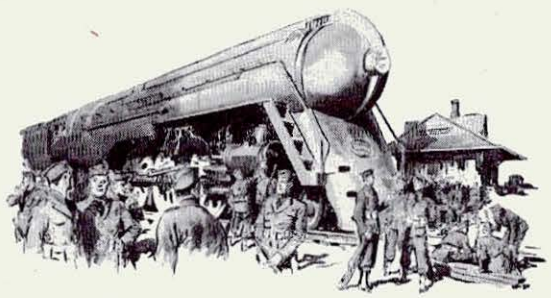
AMERICA IN MOTION . . . . by Lowell Thomas

News summary from national arsenal of mobile power

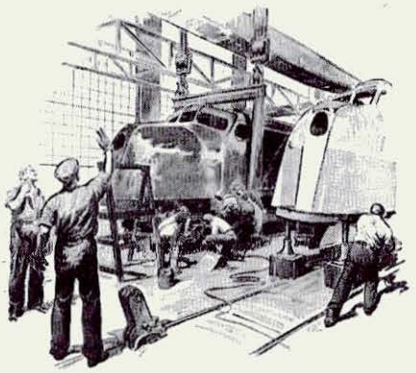


I'VE SEEN a locomotive over 130 feet long, speeding war material over mountain grades, and I'll never forget it! Now I'm here where 20 of them were born...the home of "The Big Boys," 7,000 horse-power, the heaviest and most powerful locomotives ever made...and I know now that some of the tanks and gun carriages on that train were made right here, side by side with "Big Boy."

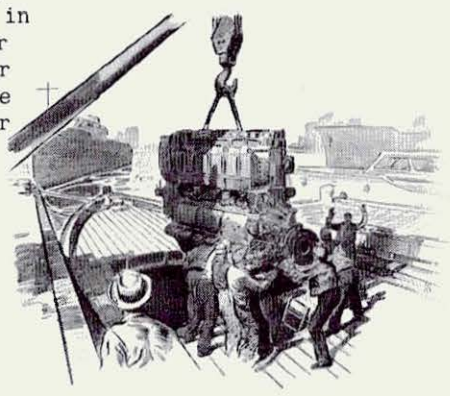


I'VE WATCHED troops unloading from train after train, powered by fast Diesel or Steam-Liners. And now I understand how the railroads are able to handle this big job, biggest in history, so well. Here they build the most modern, streamlined locomotives in the world, both steam and diesel-powered. Build them fast. Build them to win.

I'VE FELT all along that power to produce is our greatest asset. But I never saw a speed-up so swift or so well directed as this. Men swarming all over a Diesel locomotive, building medium tanks...
...skilled man-power under experienced directions. We Americans, we expect miracles. And by George, we get them!



I ASKED about power, and I got my answer in terms of diesels for the Navy...Diesel or Steam-Liners for the railroads, whichever is needed to do a particular job best...tanks and gun carriages for the Army. A great country, this. And something I saw here tells me we're going to keep it that way.



AMERICAN LOCOMOTIVE

MANUFACTURERS OF MOBILE POWER

STEAM, DIESEL AND ELECTRIC LOCOMOTIVES

MARINE DIESELS, TANKS

GUN CARRIAGES AND OTHER ORDNANCE

June 1, 1918, he was advanced to division engineer at Wheeling and on January 1, 1925, he was transferred to the St. Louis division, with headquarters at Washington, Ind. Mr. Woerner was transferred to the Chicago division, with headquarters at Garrett, Ind., in February, 1930, where he was located until his recent promotion, effective March 1.

George H. Hill, whose promotion to superintendent of the Coast division of Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Tacoma, Wash., was reported in the *Railway Age* of March 14, was born at Delmar Junction, Iowa, on December 14, 1884, and entered railway service on March 1, 1900, on the Milwaukee as an operator, later being advanced to dispatcher and chief dispatcher at Marion, Iowa. In November, 1912, he was transferred to the Trans-Missouri division as a dispatcher and later served as a dispatcher or chief dispatcher on the Trans-Missouri, Iowa, Musselshell, Rocky Mountain, Missoula and Coast divisions. In 1924 he was promoted to trainmaster on the Idaho division at St. Maries, Idaho, and on January 1, 1928, he was advanced

George H. Hill

to superintendent of the Bellingham division, with headquarters at Bellingham, Wash. In June, 1929, Mr. Hill was transferred to the Chicago and Milwaukee and Northern divisions, with headquarters at Milwaukee, Wis., and in November, 1933, he was appointed assistant superintendent of the Coast division, with headquarters at Spokane, Wash., which position he held until his recent promotion, effective March 1.

V. M. Aspinwall, chief clerk and assistant to the superintendent of transportation of the Central of Georgia, has been promoted to superintendent of transportation, with headquarters as before at Savannah, Ga., succeeding **E. H. Daniel,** who will retire on March 31. Mr. Aspinwall was born at Savannah on October 20, 1887, and was educated in the public schools of that city. He entered the service of the Central of Georgia on June 7, 1904, as clerk in the office of the auditor of traffic at Savannah. From 1906 to 1909 he was with the Atlantic Coast Line and in the latter year he left railroad service. Mr. Aspinwall returned to the Central of Georgia in December, 1917, as a clerk in the office of the vice-president and general manager. In January, 1920, he was appointed chief clerk to assistant general manager at Savannah and in May, 1930, he was appointed chief clerk to the super-

V. M. Aspinwall

intendent of transportation, becoming assistant to the superintendent of transportation in June, 1941.

Mr. Daniel was born at Columbus, Ga., on March 13, 1872, and entered the service of the Central of Georgia in January, 1889, as telegraph operator, serving successively at Guyton, Ga., Millen, Savannah, Columbus, East Point and Macon. In 1895 he was promoted to chief dispatcher for the Columbus division and in 1905 he was promoted to trainmaster for that division. In 1910 he was transferred to the Macon division and in October, 1911, Mr. Daniel became superintendent of the latter division. In 1912 Mr. Daniel was appointed transportation inspector at Savannah and in 1914 he was promoted to assistant to the general superintendent. On September 1, 1921, he was appointed superintendent of transportation, which position he held until his retirement.

TRAFFIC

Harrell L. Perkins, general industrial agent of the Central of Georgia, has had his headquarters changed from Savannah, Ga., to Atlanta.

Merle S. Sweeney has been appointed general agent of the Erie, with headquarters at Pittsburgh, Pa., succeeding **George G. Walker,** who retired on March 15 after 50 years of service.

J. F. Weibel, traveling freight agent for the New York Central at Toledo, Ohio, has been promoted to general agent, freight department, at Erie, Pa., succeeding **W. F. Gleason,** who has retired from active service.

Charles F. McTague, general freight traffic manager of the Delaware, Lackawanna & Western, with headquarters at New York, will retire on April 1, after nearly 50 years of continuous railroad service.

L. O. Drumwright has been appointed division passenger agent of the Baltimore & Ohio at Washington, D. C., succeeding **E. H. Riecks,** who has been promoted to assistant general passenger agent, with the same headquarters. **W. R. Weldon,** division passenger agent at Akron, Ohio, has been transferred to Pittsburgh, Pa.

C. H. Ware, general freight agent of the Norfolk Southern, has been promoted to traffic manager, with headquarters as before at Norfolk, Va. **R. H. Dozier** and **J. F. Flynn,** general traffic agents at Baltimore, Md., and Cincinnati, Ohio, respectively, have been promoted to assistant traffic managers, with the same headquarters. **W. H. Trice,** general traffic agent, has been promoted to assistant traffic manager, with headquarters as before at Atlanta. **C. S. Allen** and **Basil Manley,** division freight agents at Raleigh, N. C., and Norfolk, have been promoted to assistant traffic managers, with the same headquarters. **R. L. Ford,** assistant general freight agent, has been promoted to general freight agent, with headquarters as before at Norfolk, and **O. W. South, Jr.,** has been appointed assistant general freight agent at Norfolk. **H. H. Jones,** division freight agent, has been appointed assistant general freight agent, with headquarters as before at New Bern, N. C., and **J. K. Powell,** general agent, has been appointed assistant general freight agent, with headquarters as before at Charlotte. **J. A. Christensen,** general traffic agent, has been appointed general Eastern freight agent, with headquarters as before at New York, and **R. M. Anderson,** general traffic agent, has been appointed New England freight agent, with headquarters as before at Boston, Mass. **A. A. Marcus** and **E. J. Hastings,** assistant general traffic agents at New York and Boston, respectively, have been promoted to general traffic agents, with the same headquarters. **E. A. Taylor, J. M. Dillard,** and **W. V. Saggus,** assistant general traffic agents at Baltimore, Raleigh and Atlanta, respectively, have been promoted to general traffic agents, with the same headquarters. **J. H. Vaughan** has been appointed general traffic agent at Norfolk. **C. S. Durham** and **Doyle Vandiver,** assistant general traffic agents at New Bern, N. C., and Charlotte, respectively, have been promoted to general traffic agents, with the same headquarters. **W. J. Leary,** assistant general traffic agent at Atlanta, has been transferred to Norfolk and **J. E. Andrews** has been appointed assistant general traffic agent at Atlanta.

Harvey E. Dixon, whose promotion to general passenger agent of the Wabash, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of March 7, was born at Forrest, Ill., on February 11, 1892, and entered railway service in June, 1911, as a baggageman on the Wabash at Forrest, later being advanced to clerk and night chief clerk. In 1913 he was appointed expense bill revisor at Chicago and in 1914 he went with the Pennsylvania as a ticket seller at Chicago. Mr. Dixon then went with the Canadian Pacific as a ticket seller, serving at Banff, Alta., Moose Jaw, Sask., and Winnipeg, Man., and from 1917 to 1919 he served in the U. S. Army, being advanced from private to first lieu-

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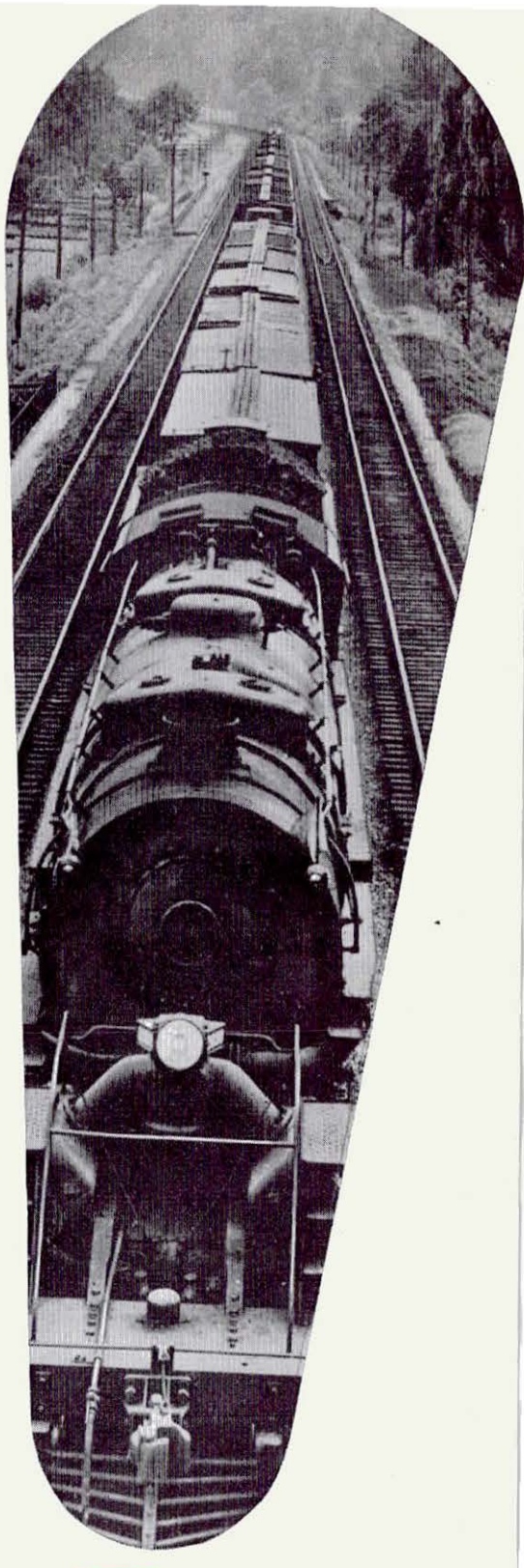

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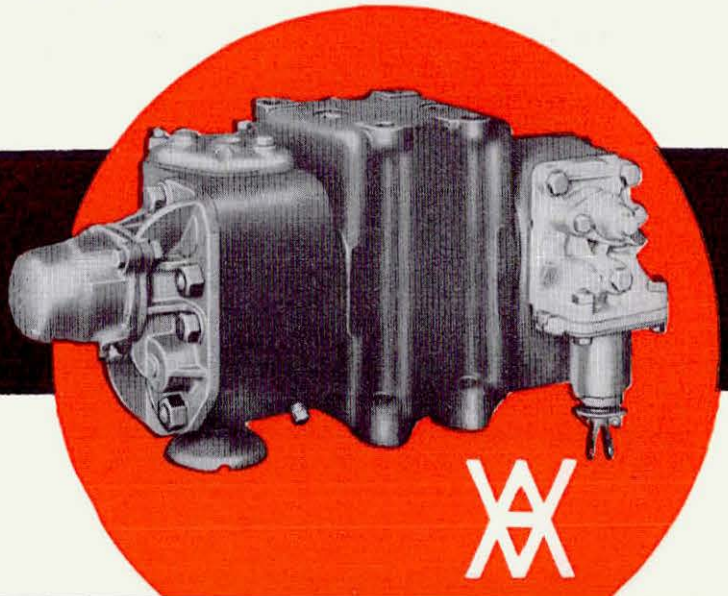
"All out" railroad service "for the duration" means utilizing to the full every facility that can contribute to speedy, uninterrupted movement of a huge traffic volume. More trains, longer trains, heavier loads, faster schedules, are all being demanded by the present emergency . . . Adequate and smooth control is paramount if safe handling of priority freight without delay is to be assured.. The AB Brake plays a vital role in the solution of prevailing intensive operating problems. » » » »



WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

tenant. He returned to railroad service in the latter year as a ticket seller at the Union Station, Chicago, and in 1920 he returned to the Wabash as traveling passenger agent at Chicago, later being advanced successively to city passenger agent and division passenger agent at that point. In 1925 he left railroad service to enter

Harvey E. Dixon

the insurance business and in 1930 he again returned to the Wabash as district passenger agent at San Francisco, Cal. In October, 1935, he was appointed division passenger agent at St. Louis and in February, 1937, he was promoted to assistant general passenger agent at St. Louis. Mr. Dixon was transferred to Chicago in September, 1938, where he remained until his recent promotion, effective March 1.

ENGINEERING & SIGNALING

H. F. Passel, assistant division engineer on the Baltimore & Ohio at Indianapolis, Ind., has been promoted to division engineer of the newly organized Indianapolis division, with the same headquarters.

John Schofield, architect of the Canadian National, with headquarters at Montreal, Que., has been promoted to chief architect of the system, with the same headquarters.

H. T. Livingston, engineer of bridges in charge of bridge maintenance and construction of the Chicago, Rock Island & Pacific, has been appointed engineer of bridges in charge of bridge design, construction and maintenance, with headquarters as before at Chicago, succeeding to the duties of **I. L. Simmons,** bridge engineer in charge of design and contracts, whose retirement on March 1 was reported in the *Railway Age* of February 28. **H. Bober,** assistant engineer at Chicago, has been promoted to assistant engineer of bridges, with the same headquarters, and **S. T. Corey,** assistant engineer of bridges, has been appointed office engineer.

George T. Donahue, assistant engineer on the New York Central, has been promoted, effective April 1, to division engineer of the Western and West divisions, with headquarters at Chicago, succeeding **George H. Smith,** who will be transferred to the Ohio Central division, with headquarters at Columbus, Ohio. Mr. Smith will relieve **C. V. Bucher,** who will be transferred to the Pennsylvania division at Jersey Shore, Pa. Effective the same date **J. R. Scofield,** supervisor of track at Columbus, Ohio, is appointed assistant engineer in the office of the district engineer at Cleveland, Ohio, to replace **J. L. Cox,** who is appointed special engineer, system, at New York. Effective May 1, **R. R. Smith,** division engineer at Jersey Shore, Pa., will be transferred to the Toledo division, with headquarters at Toledo, Ohio, to succeed **J. M. Podmore,** who will retire on April 30.

Francis T. Flynn has been appointed assistant division engineer on the Terminal division of the Boston & Maine, with headquarters at Boston, Mass., succeeding **H. W. Legro,** whose appointment as engineer of grade crossings was reported in the *Railway Age* of March 21. **Oscar C. Benson,** track supervisor at Lawrence, Mass., has been appointed acting assistant division engineer at Concord, N. H. **John A. Kerig,** assistant bridge and building supervisor at Boston, has been appointed assistant engineer, with the same headquarters. **John F. Reilly,** acting assistant division engineer on the Fitchburg division, with headquarters at Greenfield, Mass., has been appointed assistant division engineer there.

John E. Fanning, whose promotion to assistant to the chief engineer of the Illinois Central, with headquarters at Chicago, was reported in the *Railway Age* of March 21, was born at Buena Vista, Miss., on August 13, 1885, and graduated from the University of Mississippi in 1905. Mr. Fanning entered railway service in 1905 as an instrumentman on the Gulf & Ship Island (now part of the Illinois Central) at Gulfport, Miss., and was later advanced successively to assistant engineer, supervisor of track and assistant to the chief engineer. In 1917 he was appointed resi-

John E. Fanning

dent engineer on construction for the Illinois Central at Chicago and in 1919 he returned to the Gulf & Ship Island and the Mississippi Central as chief engineer. He returned to the Illinois Central, following the termination of federal control of the railroads as assistant engineer on construction at Chicago and in 1921 he was appointed roadmaster at Ft. Dodge, Iowa. Mr. Fanning was advanced to district engineer of the Western lines, with headquarters at Waterloo, Iowa, on January 1, 1923, and on March 1, 1929, he was transferred to the Southern lines, with headquarters at New Orleans, La. On November 1, 1931, he was appointed supervisor of track at Waterloo and on January 1, 1937, he was appointed assistant engineer on the Iowa division. Mr. Fanning was promoted to division engineer of that division, with headquarters at Waterloo, on February 15, 1938, which position he held until his recent promotion.

MECHANICAL

F. C. Wager, master mechanic of the Spokane, Portland & Seattle, has been appointed mechanical superintendent, with headquarters as before at Vancouver, Wash., a change of title.

G. O. Love, general locomotive foreman on the Union Pacific, has been promoted to master mechanic of the Nebraska division, with headquarters at Council Bluffs, Iowa, succeeding **A. R. Snyder,** who has been transferred to Cheyenne, Wyo., replacing **J. A. Tobin,** who has been appointed assistant master mechanic of the Wyoming division.

PURCHASES AND STORES

J. L. Quarles, general storekeeper of the Chesapeake & Ohio, with headquarters at Huntington, W. Va., has been appointed superintendent of stores, with headquarters at Cleveland, Ohio, succeeding **W. R. Culver,** deceased. **J. C. McCaughan,** district storekeeper at Richmond, Va., has been appointed general storekeeper at Huntington.

SPECIAL

W. E. Babb, publicity manager of the Chicago, Rock Island & Pacific, with headquarters at Chicago, will retire on July 1.

Samuel A. Boyer, manager of publicity and advertising for the New York, New Haven & Hartford, has been appointed manager of public relations, with offices at Boston, Mass., New York and New Haven, Conn.

Dr. E. M. Fessenden, surgeon-in-charge for the St. Louis-San Francisco at Springfield, Mo., has been appointed chief surgeon, with headquarters at St. Louis, Mo., succeeding **Dr. R. A. Woolsey,** whose death on February 23 was reported in the *Railway Age* of March 7.

OBITUARY

Geary E. Carson, who retired as district master car builder of the New York Central at West Albany, N. Y., on June 1, 1925, died on March 19.

Edward P. Marsh, assistant superintendent of the car department of the Chicago & North Western, with headquarters at Chicago, died on March 22 at the West Suburban hospital, Oak Park, Ill., after an

Continued on next left-hand page

LESS FUEL *per* TON MILE

LOCOMOTIVES equipped with HUNT-SPILLER *Air Furnace* GUN IRON parts in the valves and cylinders are doing their bit in the nation's program for the conservation of fuel.

Performance records show that these locomotives not only require less fuel per ton mile but are also exceptionally economical to maintain.

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Floating Rod Bushings
Finished Parts
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Duplex Sectional Type Packing
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illness of about a month. Mr. Marsh was born at Rockford, Ill., in 1876 and graduated in mechanical engineering from the University of Michigan in 1898. He entered railway service in 1898 as a special apprentice and inspector of new equipment on the North Western and in 1903 he was promoted to shop foreman. Mr. Marsh was advanced to general foreman in 1909, to superintendent of shops in 1919 and to assistant superintendent of the car department in 1927.

E. E. Baugh, who retired as division engineer of the Valley division of the Atchison, Topeka & Santa Fe on May 1, 1938, died on March 18.

John F. Murray, who was assistant chief engineer of the Pennsylvania system at Philadelphia, Pa., from March 1, 1920, to October, 1929, died on March 16 at his home in Moylan, Pa., at the age of 70.

James E. Gorman, president and trustee of the Chicago, Rock Island & Pacific, died in the St. Francis hospital, Evanston, Ill., on March 25. He had been in the hospital for several weeks following an attack of influenza. He was 78 years old.

Benjamin G. Fallis, who retired in 1940 as assistant general manager on the Southern, with headquarters at St. Louis, Mo., died of a heart attack at his home in that city on March 16. Mr. Fallis entered railway service as a telegrapher at Burlington, Iowa, and later was chief dispatcher and trainmaster at Oskaloosa, Iowa, for the Iowa Central (now the Minneapolis & St. Louis). In 1903 he went with the Southern as trainmaster at Lawrenceville, Va., later being promoted to division superintendent at Greenville, S. C. Mr. Fallis was advanced to general superintendent, with headquarters at St. Louis, in 1910; and on August 1, 1934, when the operating department of the Southern was reorganized, his title was changed to assistant general manager, which position he held until his retirement.

William E. Brown, assistant chief engineer maintenance of way of the Central region of the Pennsylvania at Pittsburgh, Pa., died on March 10. Mr. Brown was born on September 6, 1878, at Elma, N. Y., and received his C.E. degree in 1897 from Ohio Northern University. He entered railroad service on November 16, 1897, as chainman with the Western New York & Pennsylvania (now P. R. R.) and on August 1, 1899, he became draftsman. On July 27, 1900, he was furloughed as rodman, Middle division, Erie Canal. He became rodman on the Buffalo division of the Pennsylvania on September 21, 1900, and on January 14, 1902, he became transitman on the Eastern Pennsylvania division. On May 5, 1902, he was appointed assistant supervisor of the Conemaugh and Maryland divisions, being promoted to supervisor of the Philadelphia & Erie, Middle, and Pittsburgh divisions on July 12, 1905. Mr. Brown was appointed assistant division engineer of the Pittsburgh division of the Pennsylvania on July 1, 1917, being promoted to division engineer on February 1, 1918. He was appointed assistant chief engineer maintenance of way of the Central region on May 1, 1920.

Edward C. Schmidt, who retired in 1940 as professor of railway engineering and head of the department of railway engineering at the University of Illinois, died on March 21 in a New York hospital after a week's illness. Mr. Schmidt was born in Jersey City, N. J., on May 14, 1874, and graduated from the Stevens Institute of Technology in 1895, then going with the Kalbfleisch Chemical Company of New York and Buffalo, N. Y. In 1896 he designed conveying machinery for the C. W. Hunt Company, New York, and in 1897 he became assistant to the mechanical engineer, steam department, of the Edison Electric Illuminating Company, Brooklyn, N. Y. The following year, he went with the American Stoker Company at New York and a short time later he became an instructor and assistant professor in experimental and railway mechanical engineering at the University of Illinois. In 1903 he became engineer of the American Hoist & Derrick Co., and in 1904 he went with the Kerr Turbine Co., Wellsville, N. Y., as engineer of tests. Mr. Schmidt returned to the University of Illinois in 1906 as head of the department of railway engineering. During the first World War he served as a major in the army ordnance department on detached service with the United States Fuel Administration and the United States Railroad Administration and in 1919 he became staff mechanical engineer of the North American Company. In 1921 he returned to the University of Illinois as professor of railway engineering and head of that department, which position he held until his retirement. Mr. Schmidt has been active in the American Society of Mechanical Engineers for many years and served as chairman of the executive committee, Fuels division, in 1925 and 1926; chairman of the committee on Locomotive Test Codes in 1927; and chairman of the executive committee, Railroad division, in 1937 and 1938. He has also been active in the American Railway Engineering Association and served as chairman of the committee on the Economics of Railway Location in 1922 and 1923.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 133 Monthly Reports of Revenues and Expenses Representing 136 Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF JANUARY, 1942 AND 1941

Item	United States		Eastern District		Southern District		Western District	
	1942	1941	1942	1941	1942	1941	1942	1941
Miles of road operated at close of month	231,658	232,442	56,951	57,268	43,908	44,241	130,799	130,933
Revenues:								
Freight	$392,570,825	$309,580,453	$163,934,909	$135,862,260	$78,357,395	$65,170,467	$150,278,521	$108,547,726
Passenger	55,697,266	40,158,615	27,475,069	20,817,805	10,055,763	7,305,527	18,166,434	12,035,283
Mail	8,906,126	8,390,508	3,218,850	3,165,297	1,581,415	1,470,524	4,105,861	3,754,687
Express	4,691,014	3,405,839	1,500,947	1,213,834	813,569	768,480	2,376,498	1,423,525
All other operating revenues	18,825,926	15,838,775	9,151,501	8,008,707	2,553,273	2,133,696	7,121,152	5,696,372
Railway operating revenues	480,691,157	377,374,190	205,281,276	169,067,903	93,361,415	76,848,694	182,048,466	131,457,593
Expenses:								
Maintenance of way and structures	49,492,641	36,738,168	20,470,639	15,440,600	9,778,500	7,639,414	19,243,502	13,658,154
Maintenance of equipment	94,439,135	74,219,856	43,796,641	34,900,758	17,770,441	14,050,674	32,872,053	25,268,424
Traffic	9,711,958	8,875,256	3,444,345	3,151,215	2,023,645	1,831,741	4,243,968	3,892,300
Transportation—Rail line	176,985,410	133,970,077	80,802,701	61,722,506	30,105,374	23,492,795	66,077,335	48,754,776
Transportation—Water line	15,098	566,295	.....	.....	.....	.....	15,098	566,295
Miscellaneous operations	5,211,514	3,652,207	2,209,402	1,600,746	862,702	635,611	2,139,410	1,415,850
General	12,925,180	11,129,859	5,111,281	4,435,189	2,540,986	2,183,812	5,272,913	4,510,858
Transportation for investment—Cr.†	.....	179,975	.....	22,249	.....	39,590	.....	118,136
Railway operating expenses	348,780,936	268,971,743	155,835,009	121,228,765	63,081,648	49,794,457	129,864,279	97,948,521
Net revenue from railway operations	131,910,221	108,402,447	49,446,267	47,839,138	30,279,767	27,054,237	52,184,187	33,509,072
Railway tax accruals	51,162,929	35,856,174	20,512,393	15,258,153	13,496,247	8,881,223	17,154,289	11,716,798
Railway operating income	80,747,292	72,546,273	28,933,874	32,580,985	16,783,520	18,173,014	35,029,898	21,792,274
Equipment rents—Dr. balance	8,651,373	7,798,887	4,386,301	3,539,548	*125,127	436,807	4,390,199	3,822,532
Joint facility rent—Dr. balance	3,129,535	2,729,946	1,584,866	1,531,273	338,481	307,551	1,206,188	891,122
Net railway operating income	68,966,384	62,017,440	22,962,707	27,510,164	16,570,166	17,428,656	29,433,511	17,078,620
Ratio of expenses to revenues (percent)	72.6	71.3	75.9	71.7	67.6	64.8	71.3	74.5
Depreciation included in operating expenses	17,703,700	17,656,813	8,210,411	7,738,445	3,591,371	3,566,028	5,901,918	6,352,340
Amortization of Defense Projects	3,788,759	.....	1,263,445	.....	872,590	.....	1,652,724	.....
Pay roll taxes	13,324,058	10,050,338	5,858,300	4,484,498	2,348,677	1,816,818	5,117,081	3,749,022
All other taxes	37,838,871	25,805,836	14,654,093	10,773,655	11,147,570	7,064,405	12,037,208	7,967,776

* Decrease, deficit, or other reverse items.
† General Account VIII. Transportation for Investment—Cr. canceled effective January 1, 1942.
Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

Table of Freight Operating Statistics appears on next left-hand page

"HSC" BRAKE

Maximum

RETARDATION CONTROL UNDER ALL SPEED CONDITIONS

AT 10 m.p.h. or 100 m.p.h. the New York HSC Brake provides for rapid deceleration control of light weight equipment in such a smooth manner that the passengers rarely realize that a brake application has been made.

Maximum retardation control under all speed conditions is made possible by automatic adjustment features which insure the proper rail adhesion and prevent wheel sliding.

The smooth high braking ratios of the New York HSC Brake are in a large measure contributory to the promotion and safe operation of modern high speed passenger trains.

The New York Air Brake Company

420 Lexington Ave., New York City. **Plant: Watertown, New York**

Freight Operating Statistics of Large Steam Railways—Selected Items

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excluding locomotives and tenders	Ton-miles (*thousands*): Net revenue and non-revenue	Number of road locomotives on line: Serviceable, Not stored	Number of road locomotives on line: Serviceable, Stored	Number of road locomotives on line: Unserviceable	Number of road locomotives on line: Per cent unserviceable
New England Region:												
Boston & Albany 1942	362	161,040	171,437	15,218	3,780	70.3	208,949	78,959	62	11	15	17.0
1941	362	154,275	159,849	11,401	3,266	66.8	186,269	67,968	57	..	29	33.7
Boston & Maine 1942	1,854	345,956	396,667	34,435	12,441	70.2	719,280	286,241	152	5	16	9.2
1941	1,894	309,487	350,524	29,616	10,498	67.2	612,233	232,552	131	..	36	21.6
N. Y., New Hav. & Hartf.† .. 1942	1,816	452,103	587,675	50,802	16,748	70.3	916,803	361,937	205	5	48	19.1
1941	1,830	388,486	481,077	31,057	13,463	67.0	748,893	285,829	196	2	61	25.6
Great Lakes Region:												
Delaware & Hudson 1942	849	322,768	377,374	43,529	11,761	65.4	785,485	376,615	136	27	75	31.5
1941	844	258,852	300,097	34,647	9,129	63.6	596,473	282,646	119	49	75	30.9
Del., Lack. & Western 1942	982	391,136	451,224	63,509	15,659	70.6	945,148	413,130	149	18	33	16.5
1941	983	373,643	431,170	59,057	13,731	68.1	817,355	334,667	136	6	63	30.7
Erie 1942	2,251	880,140	930,601	54,739	38,981	71.0	2,342,406	965,627	279	43	91	22.0
1941	2,266	726,878	772,514	48,935	31,597	67.6	1,919,338	781,136	248	9	169	39.7
Grand Trunk Western 1942	1,023	284,080	287,943	1,906	8,230	65.7	506,449	194,717	68	1	19	21.6
1941	1,023	270,150	275,959	1,789	8,054	62.0	501,035	177,002	75	1	26	25.5
Lehigh Valley 1942	1,251	398,398	435,407	71,229	15,875	68.2	1,006,964	453,181	137	12	39	20.7
1941	1,252	368,146	401,292	61,806	14,003	66.6	876,613	376,571	97	1	74	43.0
New York Central 1942	10,497	3,455,165	3,715,154	234,514	119,950	63.1	8,068,546	3,575,373	1,137	57	201	14.4
1941	10,522	3,052,044	3,228,242	211,947	103,688	60.3	7,066,151	2,999,303	1,018	61	314	22.5
N. Y., Chicago & St. Louis... 1942	1,657	758,685	773,326	11,364	26,256	67.6	1,627,029	678,440	156	...	13	7.7
1941	1,672	581,070	591,699	7,928	21,648	64.4	1,339,154	522,294	133	13	20	12.0
Pere Marquette 1942	2,021	401,867	416,145	9,749	11,465	65.2	737,590	310,762	134	6	23	14.1
1941	2,068	401,437	411,233	8,739	11,257	60.9	726,713	275,115	125	1	33	20.8
Pittsburgh & Lake Erie 1942	232	102,690	105,683	.....	4,017	63.3	335,101	191,035	44	..	16	26.7
1941	233	87,921	91,123	.....	3,469	61.1	289,544	160,630	35	10	17	27.4
Wabash* 1942	2,397	670,938	688,428	15,461	22,911	69.6	1,368,433	552,493	150	30	76	29.7
1941	2,397	612,301	625,852	12,761	19,984	65.1	1,208,356	448,129	138	18	108	40.9
Central Eastern Region:												
Baltimore & Ohio 1942	6,238	2,118,468	2,629,966	275,427	65,331	63.5	4,499,165	2,076,027	879	55	207	18.1
1941	6,261	1,694,222	2,089,962	221,853	52,012	61.9	3,619,985	1,637,714	719	150	271	23.8
Central of New Jersey† 1942	661	226,889	257,773	49,304	6,749	61.5	487,393	240,361	95	22	29	19.9
1941	680	195,609	219,413	40,375	5,834	62.5	404,415	201,448	80	14	53	36.1
Chicago & Eastern Illinois.... 1942	925	200,175	201,847	3,410	5,368	67.7	347,741	159,174	71	3	17	18.7
1941	925	189,974	190,234	3,143	5,128	65.5	324,843	142,060	59	1	29	32.6
Elgin, Joliet & Eastern 1942	392	151,484	153,015	1,454	4,030	60.2	315,197	158,821	70	..	9	11.4
1941	390	129,629	131,205	1,397	3,287	56.3	265,545	129,238	63	..	13	17.1
Long Island 1942	374	28,352	29,544	18,852	267	53.0	20,055	7,812	39	3	8	16.0
1941	375	27,054	28,418	17,577	261	51.7	19,761	7,726	40	2	6	12.5
Pennsylvania System 1942	9,946	4,253,324	4,991,072	616,282	154,898	63.6	10,427,634	4,696,944	1,873	92	168	7.9
1941	9,960	3,304,734	3,973,360	462,504	123,427	61.4	8,436,799	3,706,784	1,355	162	669	30.6
Reading 1942	1,430	555,246	616,225	79,640	16,170	62.0	1,195,563	605,693	274	28	40	11.7
1941	1,432	480,312	533,186	65,978	14,569	63.2	1,057,189	532,184	234	9	111	31.4
Pocahontas Region:												
Chesapeake & Ohio 1942	3,053	970,471	1,038,754	44,490	41,417	57.4	3,429,104	1,874,099	419	23	69	13.5
1941	3,060	837,366	885,033	40,267	37,038	57.9	3,000,755	1,632,861	371	64	75	14.7
Norfolk & Western 1942	2,159	805,488	858,855	56,459	34,180	57.7	2,863,899	1,524,216	303	11	16	4.8
1941	2,169	736,360	784,991	49,553	33,709	58.9	2,723,855	1,431,537	303	15	27	7.8
Southern Region:												
Atlantic Coast Line 1942	4,986	884,522	898,884	14,485	21,263	63.5	1,302,379	505,678	304	..	37	10.9
1941	5,073	817,658	836,726	11,521	18,160	59.9	1,135,040	411,548	290	4	40	12.0
Central of Georgia† 1942	1,783	307,786	310,080	4,911	6,915	70.9	415,524	176,151	105	..	15	12.5
1941	1,831	286,879	288,986	4,401	6,432	69.8	370,366	145,430	94	..	27	22.3
Gulf, Mobile & Ohio 1942	1,962	274,264	325,623	2,272	8,999	71.7	541,878	238,322	94	2	10	9.4
1941	1,963	252,583	277,430	2,030	7,678	70.3	453,407	191,214	84	6	12	11.8
Illinois Central (incl. Y. 1942	6,501	1,774,758	1,791,964	34,676	54,050	64.4	3,635,056	1,652,244	611	4	89	12.6
& M. V.) 1941	6,557	1,396,664	1,401,439	25,549	41,122	61.7	2,744,003	1,167,059	559	16	195	25.3
Louisville & Nashville 1942	4,789	1,516,936	1,640,353	43,593	35,700	61.6	2,541,654	1,247,755	382	10	69	15.0
1941	4,862	1,277,974	1,385,661	38,030	31,684	60.5	2,243,887	1,079,603	372	31	67	14.3
Seaboard Air Line* 1942	4,295	884,594	928,205	6,851	21,915	64.8	1,396,775	564,668	268	..	32	10.7
1941	4,298	739,898	767,164	5,890	18,051	60.8	1,141,083	421,111	257	1	43	14.3
Southern 1942	6,469	1,876,851	1,912,824	28,864	42,358	67.9	2,565,532	1,113,380	571	1	95	14.2
1941	6,521	1,618,109	1,645,759	25,112	37,360	66.3	2,232,355	921,057	496	..	137	21.6
Northwestern Region:												
Chicago & North Western† ... 1942	8,264	1,054,844	1,093,418	23,231	31,688	65.8	2,022,972	808,044	357	30	173	30.9
1941	8,316	886,966	917,846	19,372	25,982	62.6	1,682,383	649,550	309	36	256	42.6
Chicago Great Western 1942	1,447	306,932	314,056	8,138	9,290	67.3	577,751	229,973	74	1	10	11.8
1941	1,447	273,883	276,281	5,087	7,978	62.0	512,290	186,988	74	1	12	13.8
Chi., Milw., St. P. & Pac.† ... 1942	10,813	1,568,770	1,647,107	69,362	47,721	64.5	3,170,453	1,409,535	496	51	92	14.4
1941	10,847	1,300,734	1,359,454	47,867	37,921	61.5	2,488,629	1,019,825	440	75	115	18.3
Chi., St. P., Minn. & Omaha. 1942	1,618	255,927	273,748	13,384	6,277	66.8	399,626	172,854	116	8	7	5.3
1941	1,618	219,651	230,719	10,120	5,166	64.7	323,855	129,828	100	17	17	12.7
Dul., Missabe & Iron Range.. 1942	542	25,171	25,313	589	412	58.4	26,131	11,267	25	22	27	36.5
1941	541	23,159	23,211	436	310	62.0	19,164	8,206	22	19	18	30.5
Great Northern 1942	7,981	1,087,816	1,083,809	34,754	36,593	69.1	2,375,330	1,062,768	367	41	81	16.6
1941	7,970	874,764	867,378	27,085	26,236	63.5	1,739,483	695,206	334	60	136	25.7
Minneap., St. P. & S. St. M.† 1942	4,258	502,443	514,738	9,911	12,025	66.7	761,945	333,465	129	2	9	6.4
1941	4,247	402,641	408,393	4,441	9,310	65.6	566,351	233,935	110	1	12	9.8
Northern Pacific 1942	6,593	883,955	935,715	63,100	32,365	72.9	2,009,685	937,783	326	55	75	16.4
1941	6,422	698,595	738,515	43,929	23,443	69.3	1,424,977	612,932	327	39	78	17.6
Central Western Region:												
Alton 1942	915	254,070	281,905	1,547	6,120	64.9	400,801	176,925	70	..	3	4.1
1941	915	211,690	231,277	992	4,713	63.1	289,604	116,591	66	10	5	6.2
Atch., Top. & S. Fe (incl. 1942	13,367	2,742,812	3,057,429	185,661	82,477	62.3	5,490,717	2,003,909	741	32	113	12.8
G. C. & S. F. & P. & S. F.) . 1941	13,431	2,048,095	2,248,008	117,934	57,318	60.9	3,750,945	1,247,650	603	68	165	19.7
Chicago, Burl. & Quincy 1942	8,904	1,375,735	1,441,842	46,047	45,169	65.6	2,891,467	1,259,332	458	9	83	15.1
1941	8,924	1,165,247	1,192,285	41,472	35,146	62.8	2,229,935	893,017	417	27	109	19.7
Chi., Rock I. & Pac.† 1942	7,917	1,335,370	1,386,860	12,319	35,261	63.7	2,233,312	879,673	370	7	112	22.9
1941	7,964	1,139,162	1,157,990	9,942	28,463	60.1	1,781,469	639,180	327	27	162	31.4
Denver & Rio Gr. Western† .. 1942	2,431	422,117	490,542	65,834	11,623	67.3	758,828	334,150	148	10	30	16.0
1941	2,550	281,009	316,050	36,740	7,857	64.5	512,259	218,522	125	22	29	16.5
Southern Pac.—Pac. Lines.... 1942	8,480	2,205,582	2,455,880	350,415	80,935	66.7	5,184,224	2,065,255	775	6	111	12.4
1941	8,519	1,619,768	1,758,918	201,619	57,094	63.0	3,660,790	1,296,123	594	24	158	20.4
Union Pacific 1942	9,871	2,624,978	2,759,763	204,685	85,450	67.1	5,333,464	2,182,004	723	14	120	14.0
1941	9,892	2,195,898	2,277,559	134,622	63,755	62.9	3,983,178	1,459,287	601	42	204	24.1
Southwestern Region:												
Mo.-Kansas-Texas Lines 1942	3,281	473,770	479,191	8,315	12,361	65.7	756,360	295,400	101	..	73	42.0
1941	3,281	386,322	389,793	4,974	9,821	64.2	586,801	211,559	75	..	97	56.4
Missouri Pacific† 1942	7,110	1,465,360	1,532,902	31,912	43,565	64.5	2,866,699	1,181,011	451	14	51	9.9
1941	7,109	1,249,155	1,284,665	26,232	36,284	62.7	2,372,286	944,510	389	22	92	18.3
Texas & Pacific 1942	1,887	323,596	323,596	2,641	10,376	64.3	657,501	244,375	92	23	61	34.7
1941	1,882	275,159	275,159	1,729	9,119	61.4	590,012	208,007	68	29	90	48.1
St. Louis-San Francisco† 1942	4,732	859,157	894,782	15,101	19,402	63.4	1,252,713	511,291	289	6	30	9.2
1941	4,735	769,303	791,819	13,542	17,308	62.1	1,110,035	444,212	273	25	28	8.6
St. Louis-San Fran. & Texas. 1942	159	30,014	30,453	53	485	63.5	30,407	11,333	10	1	..	...
1941	159	28,941	28,978	61	409	58.2	27,776	8,893	12	3	..	...
St. Louis Southw. Lines† 1942	1,600	399,030	404,333	5,221	12,523	73.1	718,271	301,111	93	9	19	15.7
1941	1,633	303,448	306,199	3,941	9,482	67.4	548,330	185,366	85	13	19	16.2
Texas & New Orleans 1942	4,415	863,539	863,880	11,308	23,336	67.4	1,499,605	615,957	218	10	28	10.9
1941	4,415	654,328	654,344	5,175	16,374	65.3	1,040,976	394,119	212	9	39	15.0

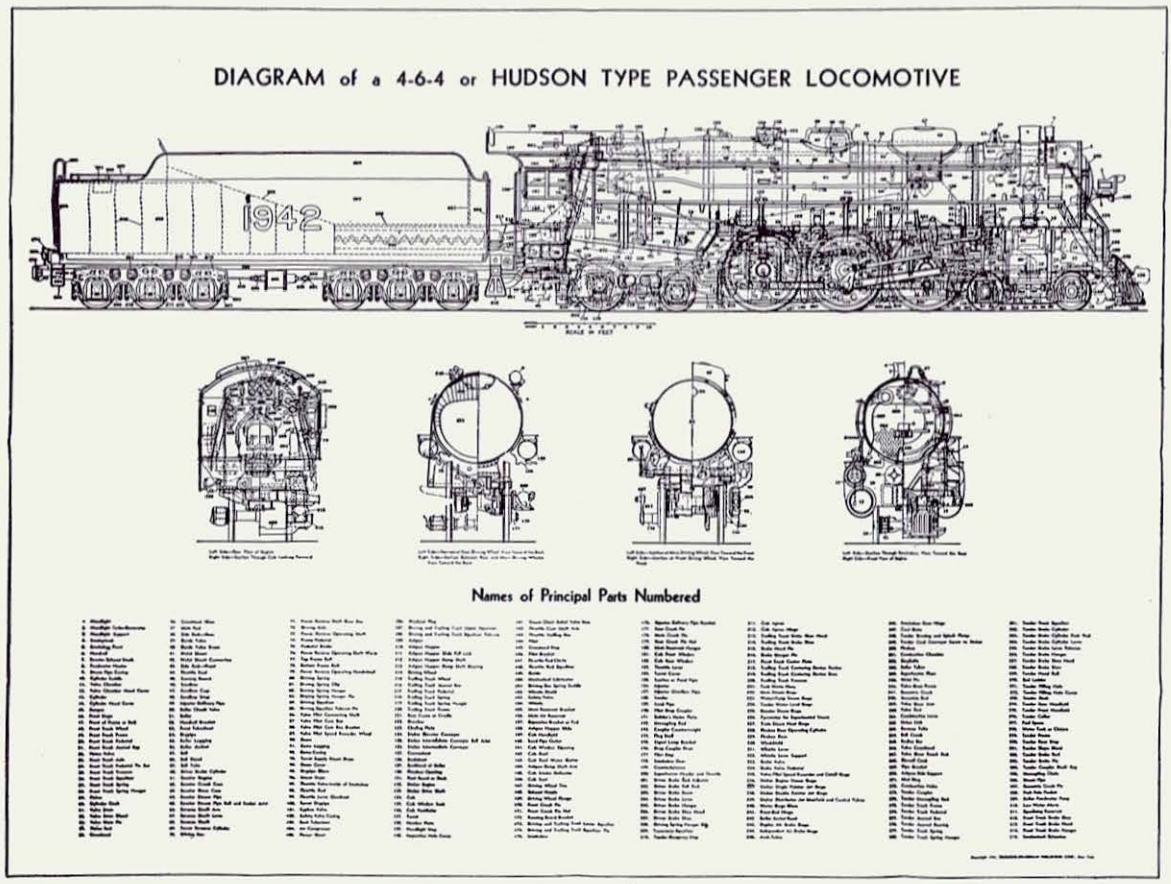
* Report of receivers.
† Report of trustee or trustees.

for the Month of January, 1942, Compared with January, 1941

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive miles per locomotive-day
New England Region:													
Boston & Albany 1942	468	4,955	5,423	0.3	22,300	1,315	497	20.9	465	31.7	7,036	166	74.1
1941	743	5,267	6,010	1.2	20,438	1,224	447	20.8	345	24.8	6,057	179	69.6
Boston & Maine 1942	3,565	10,098	13,663	2.3	29,469	2,086	830	23.0	678	42.0	4,980	107	86.6
1941	4,128	9,896	14,024	1.9	27,400	1,986	754	22.2	570	38.3	3,961	107	79.6
N. Y., New Hav. & Hartf.† 1942	4,386	21,321	25,707	2.1	29,214	2,064	815	21.6	486	32.0	6,429	112	86.2
1941	5,859	15,458	21,317	4.3	27,740	1,956	747	21.2	458	32.2	5,038	118	70.8
Great Lakes Region:													
Delaware & Hudson 1942	6,481	5,073	11,554	4.2	38,201	2,450	1,175	32.0	1,058	50.5	14,310	114	60.0
1941	7,152	5,226	12,378	4.2	35,525	2,317	1,098	31.0	757	38.4	10,803	121	47.2
Del., Lack. & Western 1942	8,067	10,724	18,791	3.2	40,583	2,434	1,064	26.4	714	38.4	13,571	136	87.2
1941	9,941	7,520	17,461	4.6	38,091	2,206	903	24.4	637	38.3	10,982	137	80.6
Erie 1942	12,512	23,299	35,811	1.9	46,260	2,681	1,105	24.8	884	50.3	13,838	105	84.4
1941	13,597	17,642	31,239	2.6	45,669	2,663	1,084	24.7	836	50.0	11,120	104	69.1
Grand Trunk Western 1942	3,646	7,119	10,765	4.1	34,712	1,794	690	23.7	576	37.1	6,140	99	116.0
1941	3,670	7,929	11,599	6.0	35,529	1,865	659	22.0	475	34.9	5,581	96	95.4
Lehigh Valley 1942	8,420	15,293	23,713	1.0	44,946	2,578	1,160	28.5	622	32.0	11,686	123	92.0
1941	8,087	11,597	19,684	1.5	46,084	2,422	1,041	26.9	626	34.9	9,702	117	87.4
New York Central 1942	68,813	79,304	148,117	4.0	38,364	2,358	1,045	29.8	791	42.1	10,987	109	102.5
1941	76,532	62,924	139,456	8.4	38,785	2,333	990	28.9	697	39.9	9,195	107	89.3
N. Y., Chicago & St. Louis 1942	5,079	12,563	17,642	1.4	39,174	2,150	897	25.8	1,317	75.4	13,208	100	161.8
1941	5,733	9,453	15,186	2.6	42,605	2,310	901	24.1	1,134	73.0	10,077	92	124.5
Pere Marquette 1942	5,496	7,777	13,273	2.5	31,772	1,848	778	27.1	727	41.1	4,960	104	91.1
1941	7,667	8,064	15,731	3.2	31,547	1,818	688	24.4	562	37.8	4,291	102	92.8
Pittsburgh & Lake Erie 1942	8,477	6,541	15,018	8.1	42,515	3,284	1,872	47.6	390	13.0	26,562	96	65.0
1941	10,600	5,027	15,627	13.5	42,674	3,304	1,833	46.3	316	11.2	22,239	100	52.5
Wabash* 1942	8,561	12,385	20,946	1.0	40,553	2,061	832	24.1	857	51.1	7,435	121	92.6
1941	10,318	10,914	21,232	2.0	39,958	1,992	739	22.4	684	46.9	6,031	122	81.7
Central Eastern Region:													
Baltimore & Ohio 1942	46,870	40,383	87,253	2.5	28,311	2,162	998	31.8	786	38.9	10,736	158	86.8
1941	50,353	29,427	79,780	5.3	29,214	2,169	981	31.5	672	34.5	8,438	154	68.3
Central of New Jersey† 1942	6,941	17,380	24,321	1.9	29,534	2,230	1,100	35.6	326	14.9	11,730	141	88.9
1941	6,362	12,260	18,622	7.6	28,972	2,182	1,087	34.5	348	16.1	9,556	143	74.1
Chicago & Eastern Illinois 1942	2,208	3,320	5,528	2.5	30,649	1,756	804	29.7	933	46.5	5,551	136	77.3
1941	2,824	3,301	6,125	5.9	31,041	1,735	759	27.7	762	41.9	4,954	134	72.0
Elgin, Joliet & Eastern 1942	8,644	9,520	18,164	3.3	14,959	2,149	1,083	39.4	286	12.0	13,070	151	105.6
1941	8,908	8,564	17,472	3.6	16,655	2,103	1,024	39.3	244	11.0	10,690	134	85.0
Long Island 1942	40	4,247	4,287	0.5	5,261	724	282	29.3	63	4.1	674	354	44.7
1941	120	3,327	3,447	0.8	5,600	744	291	29.6	75	4.9	665	355	45.4
Pennsylvania System 1942	55,318	97,582	252,900	4.9	34,148	2,518	1,134	30.3	605	31.3	15,234	132	93.1
1941	75,756	59,391	235,147	14.3	37,334	2,604	1,144	30.0	510	27.7	12,005	120	72.6
Reading 1942	19,765	17,676	37,441	6.2	26,400	2,161	1,095	37.5	515	22.2	13,663	139	78.6
1941	21,399	15,177	36,576	11.9	28,214	2,212	1,113	36.5	471	20.4	11,988	140	64.6
Pocahontas Region:													
Chesapeake & Ohio 1942	41,681	13,506	55,187	1.2	50,634	3,568	1,950	45.2	1,097	42.2	19,802	86	76.5
1941	45,138	9,769	54,907	1.8	51,793	3,609	1,964	44.1	946	37.1	17,213	84	65.2
Norfolk & Western 1942	36,477	7,297	43,774	1.1	56,491	3,621	1,927	44.6	1,079	41.9	22,774	98	96.8
1941	39,073	6,402	45,475	2.1	57,683	3,744	1,967	42.5	977	39.1	21,290	96	84.0
Southern Region:													
Atlantic Coast Line 1942	10,385	12,899	23,284	4.7	25,372	1,480	575	23.8	705	46.7	3,272	115	94.2
1941	13,523	10,572	24,095	13.1	23,955	1,392	505	22.7	551	40.5	2,617	115	90.1
Central of Georgia† 1942	2,928	5,344	8,272	0.6	25,724	1,365	578	25.5	670	37.1	3,187	128	91.6
1941	4,303	3,773	8,076	2.6	25,493	1,296	509	22.6	570	36.1	2,562	126	84.5
Gulf, Mobile & Ohio 1942	2,754	5,417	8,171	1.5	36,015	1,983	872	26.5	967	50.9	3,918	116	104.8
1941	3,566	3,881	7,447	3.5	33,163	1,797	758	24.9	853	48.7	3,142	113	93.3
Illinois Central (incl. Y. & M. V.) 1942	25,746	25,571	51,317	1.2	33,412	2,097	953	30.6	1,047	53.2	8,198	138	89.3
1941	28,538	16,839	45,377	2.1	32,641	1,993	848	28.4	820	46.8	**5,742**	**138**	**64.1**
Louisville & Nashville 1942	36,047	13,329	49,376	1.9	25,238	1,679	824	35.0	794	36.9	8,405	170	125.7
1941	35,394	11,226	46,620	3.7	27,865	1,758	846	34.1	742	36.0	7,163	128	104.8
Seaboard Air Line* 1942	8,932	13,393	22,325	1.7	27,128	1,615	653	25.8	830	49.7	4,241	134	110.5
1941	11,332	9,726	21,058	2.6	26,483	1,569	579	23.3	650	45.9	3,161	128	92.2
Southern 1942	19,847	25,078	44,925	3.3	23,280	1,383	600	26.3	800	44.9	5,552	153	98.9
1941	22,870	22,363	45,233	8.7	23,525	1,392	574	24.7	672	41.1	4,556	148	89.2
Northwestern Region:													
Chicago & North Western† 1942	28,079	28,784	56,863	4.4	28,405	1,987	793	25.5	456	27.2	3,154	141	68.8
1941	31,209	21,367	52,576	5.7	29,763	1,939	749	25.0	369	23.6	2,520	134	55.1
Chicago Great Western 1942	1,387	4,548	5,935	0.9	33,045	1,887	751	24.8	1,299	78.0	5,127	133	131.6
1941	2,041	3,535	5,576	1.1	34,244	1,874	684	23.4	1,092	75.1	4,169	129	112.7
Chi., Milw., St. P. & Pac.† 1942	32,846	25,052	57,898	1.4	31,326	2,033	904	29.5	781	41.0	4,205	130	94.1
1941	41,099	19,634	60,733	2.9	31,686	1,921	787	26.9	539	32.6	3,033	129	78.6
Chi., St. P., Minn. & Omaha 1942	1,902	7,973	9,875	3.8	21,148	1,585	686	27.5	637	34.6	3,446	127	75.2
1941	2,152	5,699	7,851	5.9	20,058	1,487	596	25.1	521	32.1	2,588	127	62.7
Dul., Missabe & Iron Range 1942	13,160	543	13,703	2.8	13,826	1,094	472	27.3	27	1.7	671	170	17.7
1941	13,268	367	13,635	2.4	12,222	875	375	26.5	20	1.2	489	213	17.0
Great Northern 1942	27,605	12,348	39,953	2.1	34,318	2,197	983	29.0	847	42.2	4,296	118	79.1
1941	32,904	9,745	42,649	3.8	32,655	1,997	798	26.5	532	31.6	2,814	125	59.5
Minneap., St. P. & S. St. M.† 1942	9,516	6,029	15,545	2.8	26,963	1,530	669	27.7	689	37.2	2,526	113	123.8
1941	11,710	4,692	16,402	4.0	24,177	1,411	583	25.1	466	28.3	1,777	116	110.1
Northern Pacific 1942	24,971	8,534	33,505	5.6	36,443	2,288	1,068	29.0	907	42.9	4,588	139	77.4
1941	27,639	6,011	33,650	6.4	34,130	2,054	883	26.1	596	32.9	3,079	142	62.1
Central Western Region:													
Alton 1942	934	6,526	7,460	2.5	36,014	1,591	703	28.9	793	42.3	6,237	158	132.6
1941	1,466	5,396	6,862	4.9	36,314	1,379	555	24.7	565	36.2	4,110	149	98.7
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.) 1942	55,037	21,925	76,962	4.4	39,288	2,007	733	24.3	818	54.0	4,836	126	123.7
1941	60,376	13,007	73,383	7.9	36,955	1,836	611	21.8	553	41.7	2,997	124	96.3
Chicago, Burl. & Quincy 1942	21,838	21,695	43,533	2.3	35,059	2,113	920	27.9	923	50.4	4,562	119	92.5
1941	26,617	17,429	44,046	4.0	33,899	1,923	770	25.4	649	40.7	3,228	117	76.0
Chi., Rock I. & Pac.† 1942	14,910	17,914	32,824	2.6	30,453	1,681	662	24.9	892	56.2	3,584	129	97.7
1941	17,830	11,578	29,408	3.2	30,564	1,567	562	22.5	700	51.9	2,589	121	77.7
Denver & Rio Gr. Western† 1942	9,302	5,191	14,493	2.7	29,198	1,804	794	28.7	767	39.6	4,434	184	99.9
1941	10,736	2,994	13,730	3.0	29,920	1,833	782	27.8	513	28.6	2,764	170	69.3
Southern Pac.—Pac. Lines 1942	27,112	43,301	70,413	2.2	34,300	2,367	943	25.5	931	54.7	7,856	111	107.7
1941	28,107	25,420	53,527	4.4	37,502	2,271	804	22.7	761	53.2	4,908	104	87.8
Union Pacific 1942	34,336	27,151	61,487	6.2	39,974	2,051	839	25.5	1,131	66.0	7,131	134	115.3
1941	35,377	20,182	55,559	5.6	39,874	1,834	672	22.9	838	58.2	4,759	133	95.6
Southwestern Region:													
Mo.-Kansas-Texas Lines 1942	5,003	7,197	12,200	8.0	30,315	1,600	625	23.9	813	51.8	2,904	96	97.3
1941	5,359	3,930	9,289	7.4	30,524	1,521	548	21.5	747	54.0	2,080	93	78.8
Missouri Pacific† 1942	14,071	30,208	44,279	1.1	34,663	1,968	811	27.1	886	50.7	5,358	127	105.1
1941	16,163	19,006	35,169	2.2	34,412	1,908	760	26.0	884	54.2	4,286	126	90.5
Texas & Pacific 1942	2,603	5,926	8,529	1.6	39,345	2,045	760	23.6	936	61.8	4,178	97	64.0
1941	3,078	4,763	7,841	2.0	41,536	2,146	756	22.8	855	61.1	3,565	85	50.8
St. Louis-San Francisco† 1942	11,842	9,846	21,688	2.9	29,188	1,468	599	26.4	774	46.4	3,485	140	96.1
1941	14,587	6,056	20,643	2.4	29,721	1,449	580	25.7	683	42.8	3,026	130	83.0
St. Louis-San Fran. & Texas. 1942	.....	378	378	5.3	21,955	1,015	378	23.4	991	66.8	2,299	136	91.0
1941	.....	375	375	2.7	20,667	962	308	21.7	737	58.3	1,804	141	63.0
St. Louis Southw. Lines† 1942	1,649	5,295	6,944	1.2	33,895	1,818	762	24.0	1,535	87.3	6,071	93	112.6
1941	2,133	3,520	5,653	1.1	35,935	1,809	612	19.5	1,099	83.4	3,662	90	90.5
Texas & New Orleans 1942	4,652	13,852	18,504	2.6	33,625	1,753	720	26.4	1,082	60.8	4,500	88	113.6
1941	5,486	11,790	17,276	3.9	30,636	1,603	607	24.1	747	47.5	2,880	90	87.5

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

New Wall Chart



This new chart of a 4-6-4 Hudson Type Passenger Locomotive is ideal for framing as a wall chart or for a glass top desk. It shows 315 numbered parts, including all the latest locomotive appliances. Elevation scale drawings of locomotive and tender, and four cross sections of the locomotive show all important details. Printed on heavy part-rag paper which will not discolor, it will stand hard use. It can be mailed flat or folded for a 10″ x 12″ file.

1941. Flat, 40″ x 20″; folded, 9″ x 12″, $.50

LOCOMOTIVE AND TENDER DEFECT CHART

This chart, which is now available either flat or folded, shows a 4-6-4 Hudson Type locomotive with 199 numbered parts. In the text these parts are named and the I.C.C. regulations covering them are explained, followed by the number of the rule. The absence of a rule number implies that no particular rule covers the part or appliance, in which case the general rule covering defects applies.

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Chart of 2-8-2 Mikado Freight and of 4-6-2 Pacific Passenger Locomotive

Elevation and four cross section drawings with 308 numbered parts.

1920. 15″ x 22″; folded to 11″ x 7½″, $.15

I.C.C. Defect Chart of a 2-8-2 Mikado

Elevation drawing of locomotive and tender with defects to be looked for by I.C.C. inspectors numbered for reference to U.S. Regulations.

1920. 34″ x 22″; folded to 8″ x 9″, $.15

Anatomy of a Standard Double-Sheathed Steel-Frame Box Car

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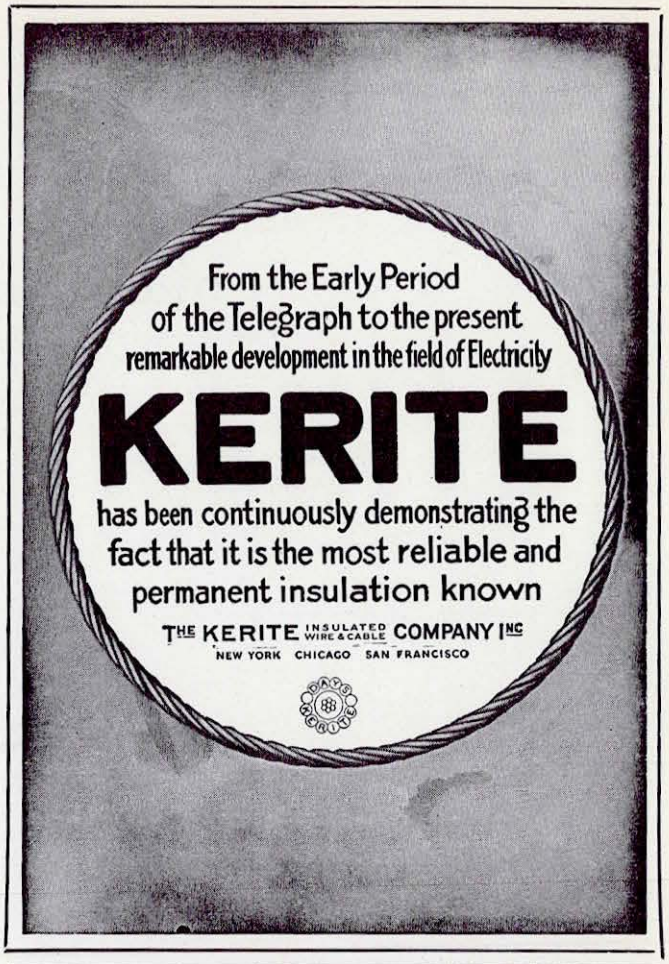
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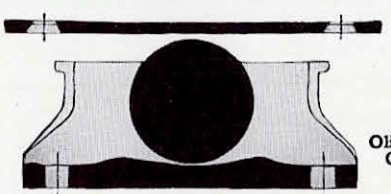

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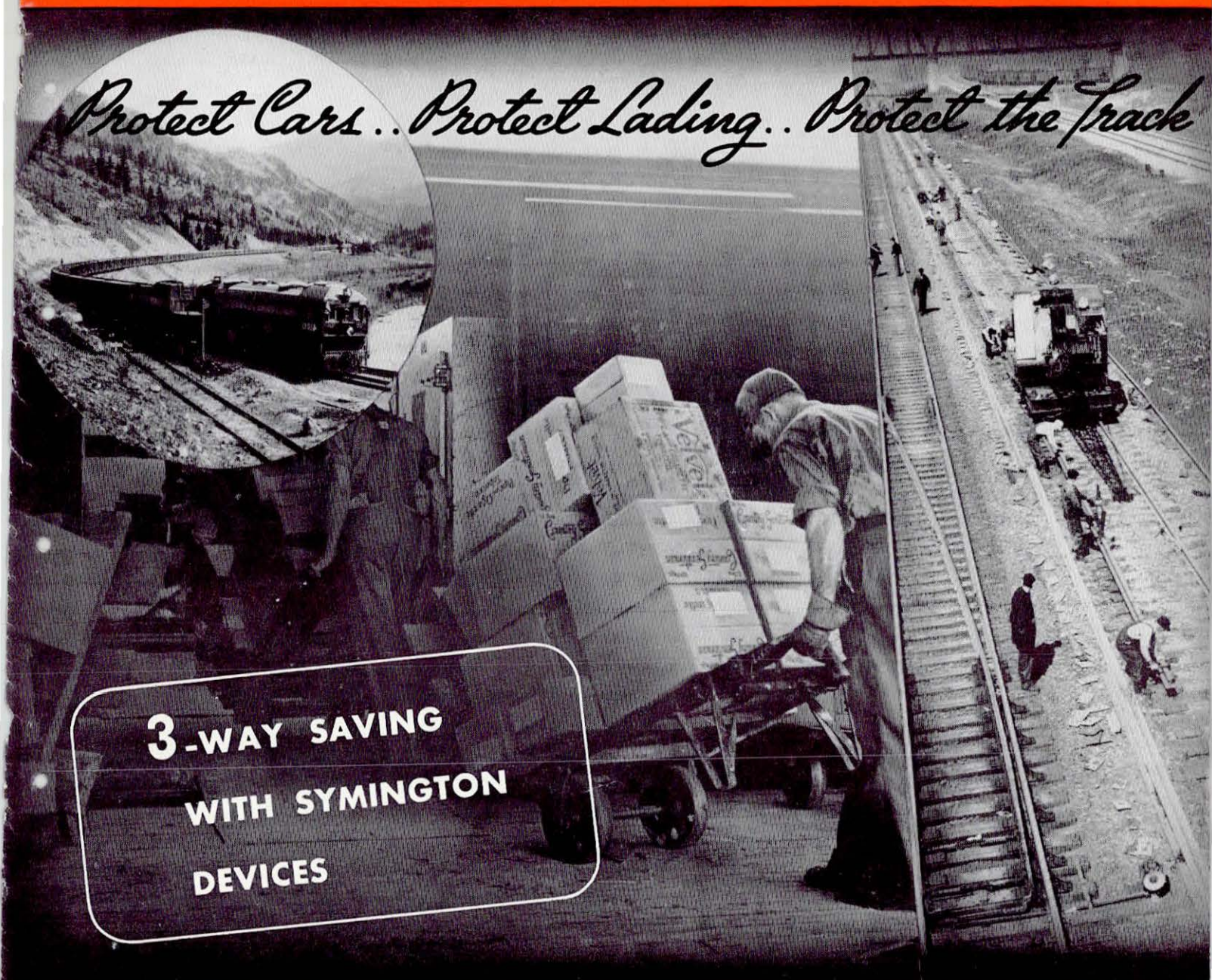

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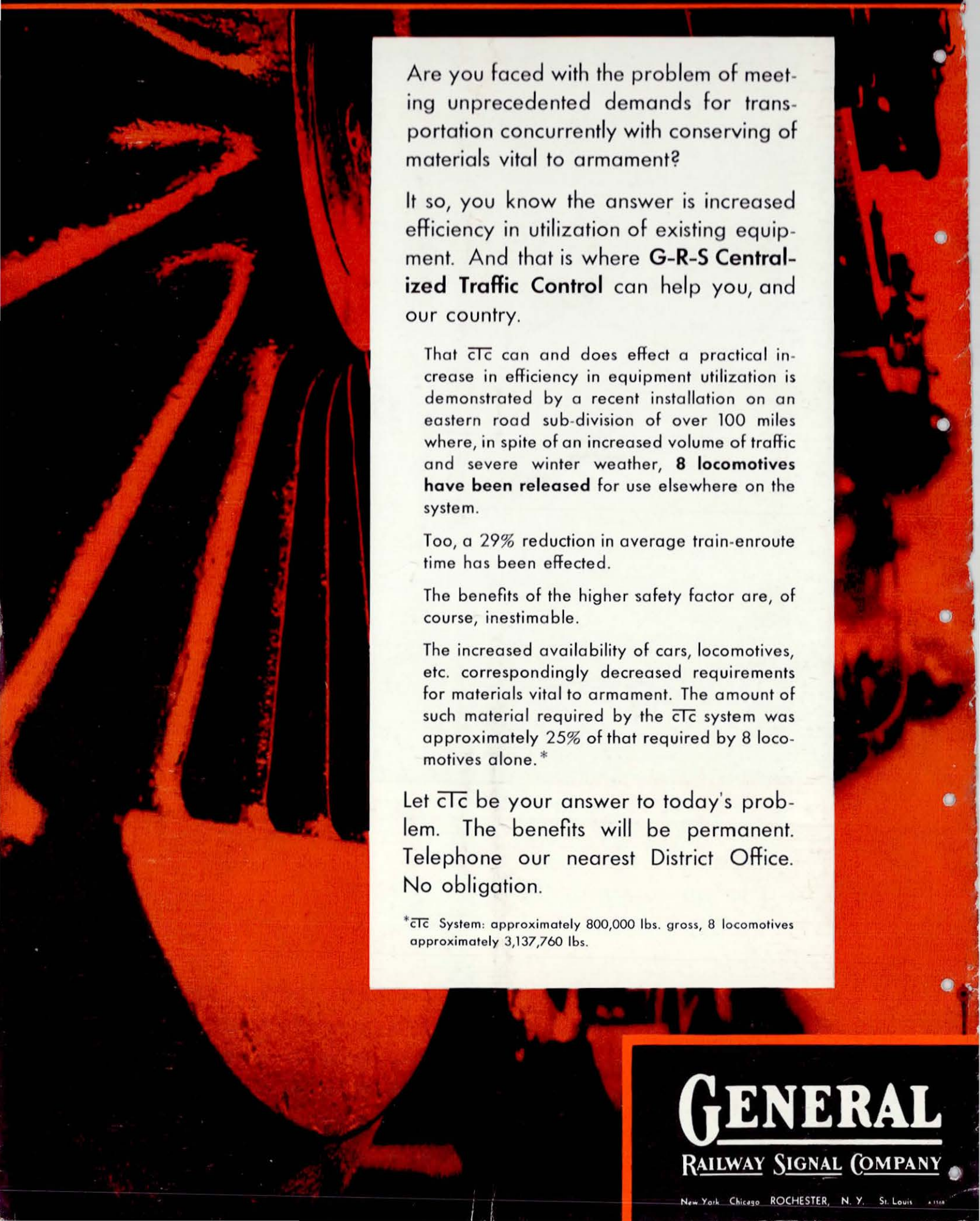

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